2N - Mobility Extension

User Manual

Version: 1.5

Dear customer,

We congratulate you on the purchase of the **2N - MOBILITY Extension***. This new product was developed and produced with view to maximum usage value, quality and reliability. Our wish is your full and long-term satisfaction with the* 2N - MOBILITY Extension*.*

- The producer simultaneously improves the software contained in the product (so-called firmware). The used technology enables to us to record at any time the newest version of the control programme by means of common computer. The most up-to-date version of the firmware may be loaded from **www.2n.cz.** Necessary instructions are given in chap. 9.9 of the manual. We recommend you to use the most up-to-date version of the firmware.
- On **www.2n.cz**, there is also the newest version of the user documentation.
- Before installation of the product, check the completeness of the delivery according to attached packing list and make acquainted with the instructions stated in the manual. The producer is not responsible for losses caused by improper use of the product contrary to instructions given in the user manual. The guarantee terms do not apply to the damage of the product by rough handling, improper storage of exceeding of the given technical parameters.

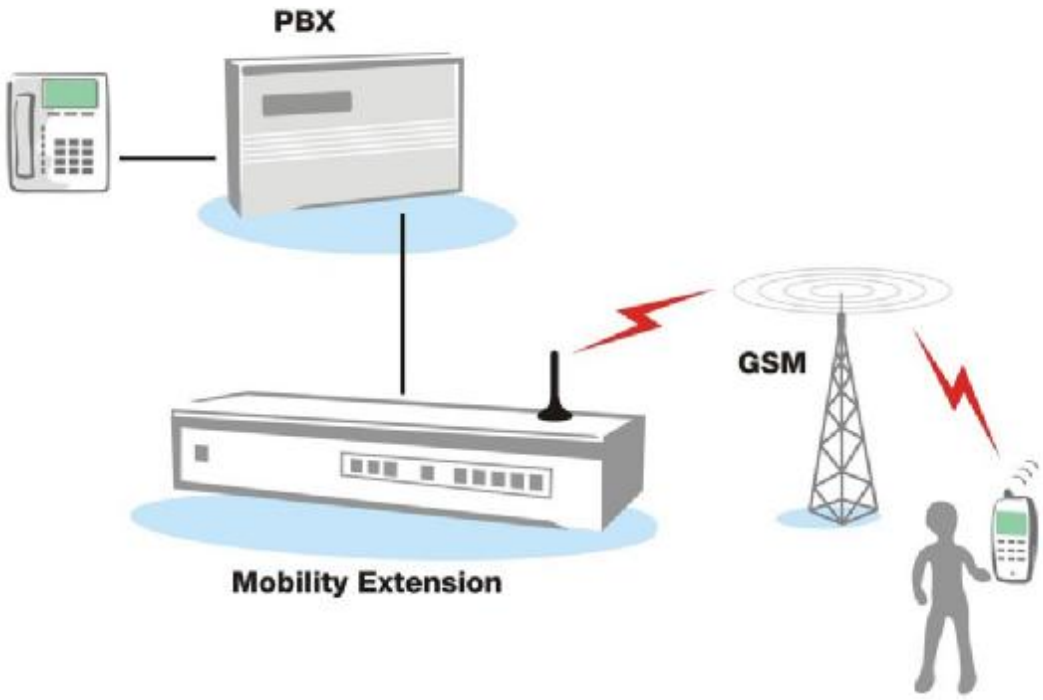
CONTENTS

1. 2N - MOBILITY Extension 5
2. Basic Module 6
3. Description of Mechanical Components 7
3.1. Base (Chassis) 7
3.2. Gateway Cover 8
3.3. 19“ Rack Base 8
4. Description of Electrical Components 9
4.1. Motherboard 9
4.2. Power Supply - Mains Part and Transformer 14
4.3. Power Supply Mains Part 14
4.4. Mains Transformer 14
4.5. Power Supply with Battery Back-Up (Main Power Supply Board) 14
4.6. Display 16
4.7. 19“ Rack Display 16
5. Extension Module 17
6. Interface Modules 19
6.1. CO Line Module 19
6.2. 2 CO Line Module - CLIP 20
6.3. Internal GSM Board 900/1800 MHz for 2 GSM 21
6.4. 900/1800/1900 MHz GSM Module for 2 GSM 22
6.5. ISDN S_0 Module 22
6.6. Voice Module 24
6.7. Distribution Module with RJ-12 Connectors, 2 Wires, 8 Lines 25
6.8. Antenna Combiner 25
7. PBX Connection 26
7.1. Recommended 2N - MOBILITY Extension Setup 27
8. Programming 32
8.1. Universal config tool for OMIKRON and MOBILITY Extension 32
8.1.1. Data 32
8.1.2. Windows 34
8.1.3. Settings 34
8.1.4. Local Connection 35
8.1.5. Modem 35
8.1.6. Confirmation 36
8.1.7. Language Selection 38
8.2. Help 38
9. 2N - MOBILITY Extension Programming Charts 39
9.1. Global Data 39
9.1.1. Information 40
9.1.2. Hardware 41
9.1.3. Gateway Diagnostics 41
9.1.4. Passwords 42
9.1.5. CO Lines 43
9.2. Accounting 45
9.2.1. Tones 45

9.3. CO Lines 47
9.3.1. Line Types 47
9.3.2. Types of Digital Lines 50
9.3.3. Trunks 51
9.3.4. Global Data 52
9.4. Incoming Calls 52
9.4.1. Ringing 52
9.5. MOBILITY Extension 53
9.5.1. MOBILITY Extension IN 53
9.5.2. MOBILITY Extension OUT 57
9.5.3. DTMF Setting of MOBILITY Extension by User 61
9.6. ISDN Line 62
9.7. REMOTE SUPERVISION 64
9.7.1. This is what remote supervision makes possible: 64
9.7.2. What you need 64
9.7.3. Modem Module (OMOD) Setting 64
9.7.4. Description of Menu a Bar Buttons 65
9.7.5. Establishing Connection 67
9.7.6. Loading Data 71
9.7.7. Panel 71
9.7.8. Remote Supervision Logistics 71
9.7.9. Interrupting Connection 71
9.7.10. Cancelling Connection 71
9.8. Accounting and Diagnostic DATA Downloading 72
9.8.1. Using Universal config tool for OMIKRON and MOBILITY Extension 73
9.8.2. Using XAPI Server 73
9.9. Upgrade of firmware to the 2N - MOBILITY Extension 73
9.10. License 74
9.10.1. License Storing 74
10. LCR Settings 77

1. 2N - MOBILITY Extension

Helps you control your PBX services from your mobile telephone.



-**Incoming calls** are directed to your fixed line and the **MOBILITY Extension**, which calls your GSM telephone. While calling you can make use of all services of your PBX including call transfer to another subscriber.

2. Basic Module

Every assembled basic module consists of the following components:

- chassis (metal case);
- plastic cover including display;
- motherboard;
- universal serial port;
- power supply
- combined distribution module
- necessary power supply and serial module cabling.

The following components are added:

- wall-mounting element, packaged, including dowels and screws for GW wall mounting;
- mains cord;
- connecting cable for one extension module
- flat cable for distribution module
- clamp tapes for cabling;

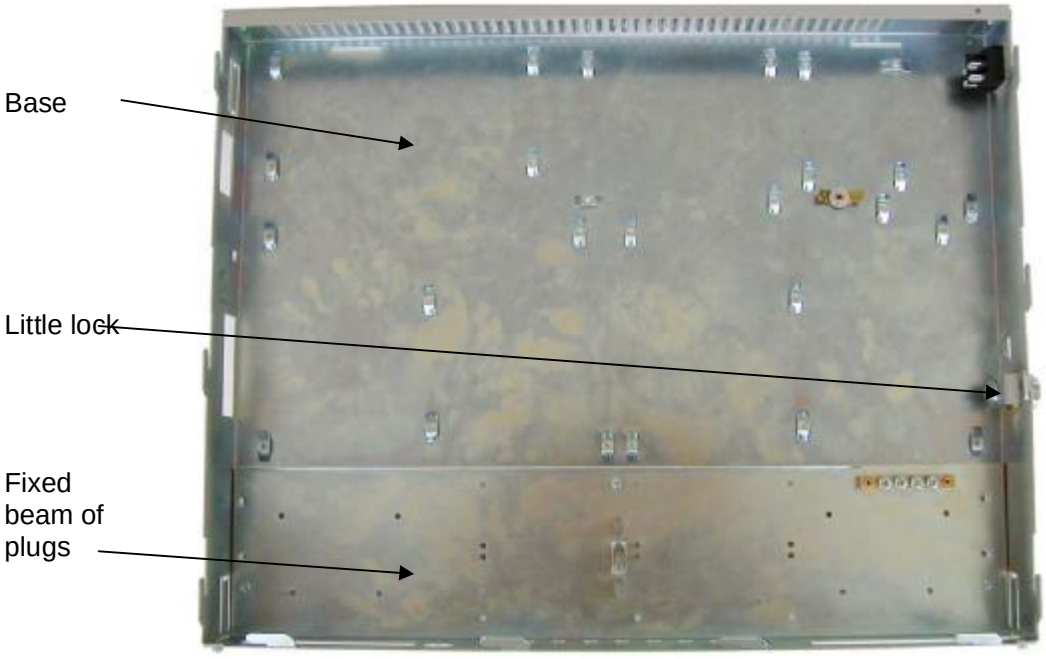
Moreover, the following accessories are included:

- serial cable with RJ-12 terminals and one gender changer for DB-9 connector
- lock key
- spare fuses
- Installation Manual
- Declaration of conformity
- CD with programming software and documentation

3. Description of Mechanical Components

3.1. Base (Chassis)

The base carries the GW components. Its bottom carries distribution modules. There is a lock on the right-hand side of the base that prevents the cover from opening. On the left-hand side, there is a pre-pressed hole for transferring the lock to the left.



3.2. Gateway Cover

The plastic GW cover contains a display. The cover is equipped with hinges on both sides, which allows you to change the cover opening direction (in this case the base lock position is to be changed).

3.3. 19“ Rack Base

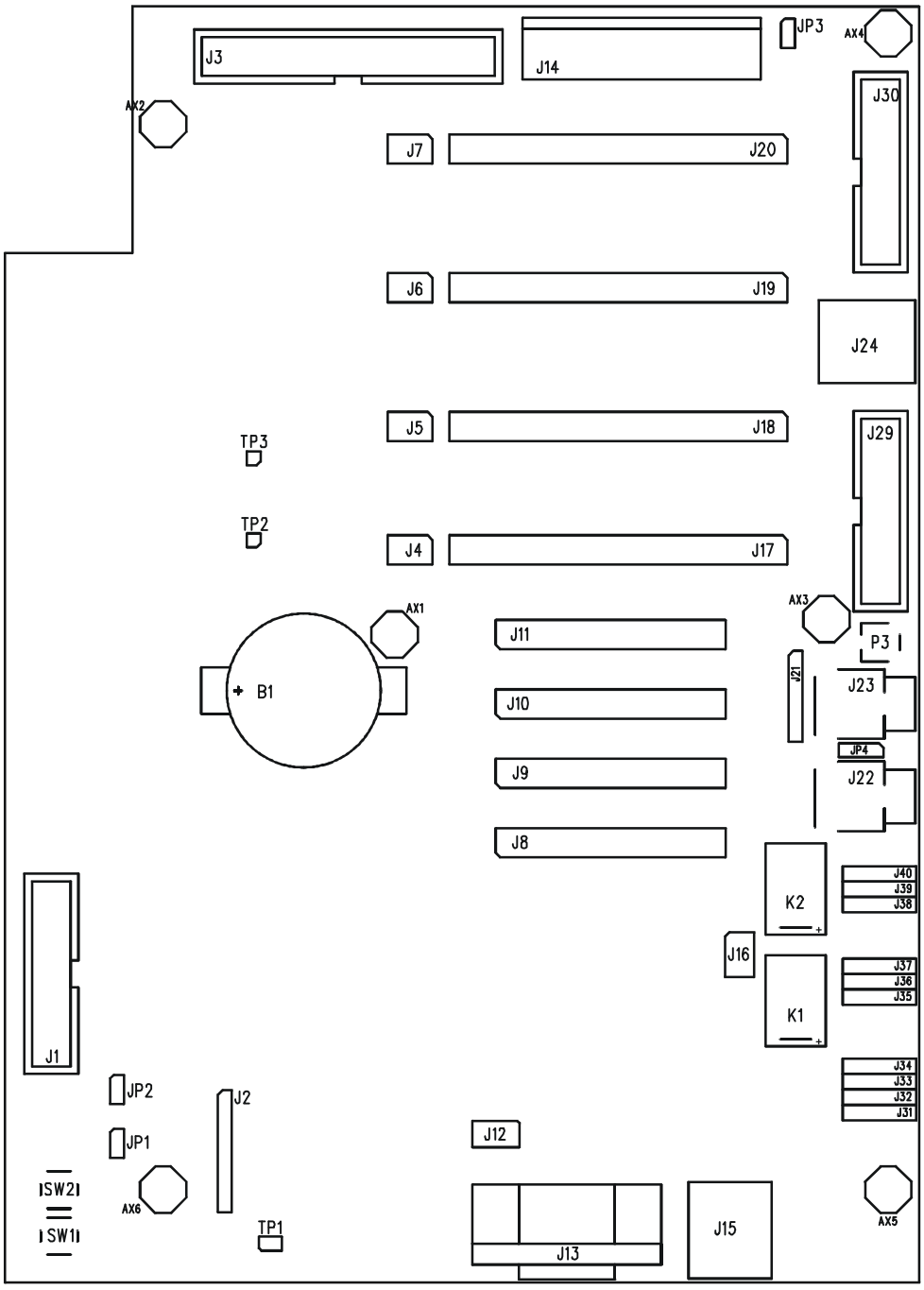
The base is a 19“ rack of the size of 2U. All line connections including GSM module SIM card accesses are located on the front panel. A 230V supply cable including a 1A fuse and YAGI antenna connector are on the back panel.

To remove the upper or bottom GSM gateway cover, take the following steps:

-Switch the supply button on the front panel into position "0“.
-Disconnect the mains supply cable on the back panel.
-Unscrew 4 screws on the back panel and remove the two plastic latches fitting the upper and bottom covers.
-Remove the upper or bottom cover.

4. Description of Electrical Components

4.1. Motherboard



B1 - Lithium battery holder. We recommend you to replace the battery if the voltage drops below 2.5 V, or once in three years at least. You are recommended to replace the battery with your GW off. You are recommended to save the GW program and accounting data in your PC before replacement. After replacement, check and, if incorrect, reset the date, time and program of the GW. You can also replace the battery carefully with your GW on. In that case make sure that no call is being made.

WARNING! Use a tool made of some insulating material for replacement only!!!

J1 - Display connector
J2 - External serial FLASH memory connector
J3 - Extension module connector
J9 – J10- Voice module
J8 -Modem module connector
J12 - Company's servicing testing connector
J14 - Power supply connector – see Fig. 2
J15 - RJ12 connector with galvanic isolation for PC connection , for wiring see Fig. 5 and Note
J16 - 3 TTL BIN inputs (not used so far)
J17 – J20 - Line module connectors (CO lines, subscriber lines, system lines, etc.) – see Fig. 1
J21 - Internal music source connector (tune selection), see Fig. 8
J22 - Line output (CINCH – AUX OUT) for broadcast unit, paging system, recorder/player connection
J23 - Line input (CINCH – AUX IN) for external music source connection (CD, broadcast, e.g.)
J24 - RJ-12 service connector. Leads to interface A of the second module from the left (J18). It is designed for temporary connection of subscriber lines, CO lines, or system telephones for servicing purposes only.

WARNING! Do not use for permanent connection. The input is not equipped with any overvoltage protector!

J29 - Distribution module connector – A/B line interface conductors – see Fig. 3
J30 - Distribution module connector – C/D line interface conductors (for system telephone, E+M interface connection) – see Fig. 4
J31, J32 - BIN 0 - TTL logical input (J31 – GND, J32 – BIN 0), here a TTL signal or switching contact against the ground can be connected.
J33, J34 - BIN 1 - TTL logical input (J34 – GND, J33 – BIN 1), here a TTL signal or switching contact against the ground can be connected.
J35, J36, J37 - Universal switch 1 (relay) contacts. Connection and connecting/disconnecting contact selection are the same as with switch 2.

J35, J36 – Universal relay disconnecting contacts

J36, J37 – Universal relay connecting contacts

J38, J39, J40 – Universal switch 2 (relay) contacts. Connection and connecting/disconnecting contact selection are the same as with switch 1.

J38, J39 – Universal relay disconnecting contacts

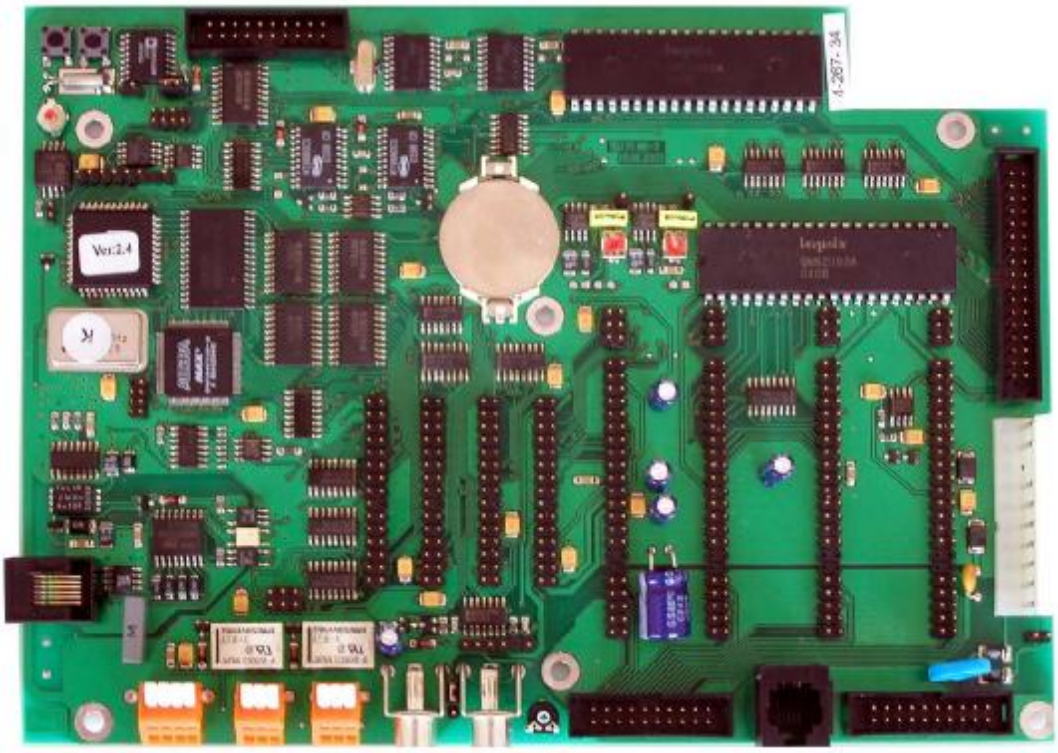
J39, J40 – Universal relay connecting contacts

JP1 - Shorting jumper – always disconnected – record in internal FLASH memory enabled
- connected – record in internal FLASH memory disabled

JP2 - Shorting jumper – always connected (WATCH DOG activation)

JP3 - Shorting jumper – always disconnected (for testing purposes only – GND and PGND interconnection)

JP4 - Shorting jumper for music source switching (external, internal, or internal from the voice module)



K1, K2 - Universal relays

P3 - Internal and external music source control (AUX IN)

SW1 - Auxiliary Reset button – refer to the *Reset* chapter

SW2 - Reset button – refer to the *Reset* chapter

TP1 - Servicing

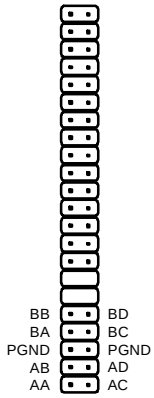


Fig.1:
Connectors for Modules with Lines

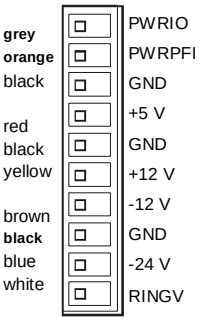


Fig. 2:
J14 Power Supply Connector Pinning

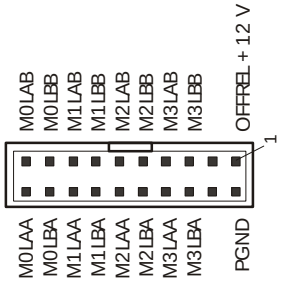


Fig. 3:
Main Distribution Module Connector

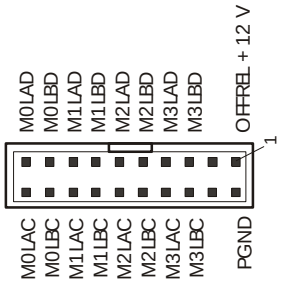
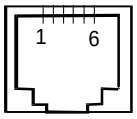


Fig. 4:
Auxiliary Distribution Module Connector



1 - RTS
2 - TXD
3 - GND
4 - GND
5 - RXD
6 - CTS

Fig. 5:
RJ-12 Connector Wiring

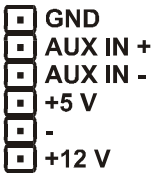


Fig. 8:
Internal Music Source Connector

Note:
J15 – connector for PC connection. It helps to program the gateway using the Universal config tool for OMIKRON and MOBILITY Extension software. The serial port includes an insulating DC/DC converter of its own and, by optical signal transmission, provides the galvanic isolation of the serial port from the GW with a guaranteed insulation strength of 2000 V.

This solution has the following advantages:

- *helps transmit data over long distances;*
- *improves data transmission reliability (EMI resistance);*
- *enables communication with a PC powered from a different power supply section (from a different phase or the central UPS, e.g.);*
- *improves overvoltage resistance of the input.*

An ordinary (i.e. cross-over!!!) four-wire telephone cord with RJ-12 terminals is normally used for PC connection instead of a special serial cable, over long distances in particular.

In addition to connectors, sockets, and jumpers described in the lay-out, the motherboard contains the following important circuits:

- ATMEL AT89C52 processor with clock frequency of 24 MHz
- static CMOS RAM 4 Mb (for proprietary software, billing data, etc.) with battery back-up
- serial FLASH EPROM 4Mb (for firmware, GW setup, etc. back-up)
- RTC circuit with a very precisely adjusted crystal oscillator
- MAXIM MAX691 data protection circuit for RAM and program run watch-dog
- circuits separating the processor part - reduce rf power radiation significantly
- 4 DTMF (tone dialling) receivers
- 4 CPT (425 Hz tone) receivers
- 2 DTMF (tone dialling) transmitters
- impedance matching termination circuits for 12 speech buses
- cross-point switch circuit to transmit tones, music and voice messages to all of the 12 speech buses
- 12 x 8 cross-point switch for 8 interfaces

4.2. Power Supply - Mains Part and Transformer

WARNING! These parts are connected with the power supply network and work with danger voltage. All repairs and replacements of these parts are made at the manufacturer's only! The following operations are allowed only:

- fuse replacement;
- mains cord connection and disconnection.

WARNING! Always make the above mentioned operations with your GW off and disconnected from the mains!!!

4.3. Power Supply Mains Part

This part is the same for power supplies without and with battery back-up. It includes a well-tried three-wire overvoltage protector and a low-pass LC filter. The mains cord is disconnectable (the so-called EURO socket). This allows you to extend the cord smartly using the EURO extension cable (used for PC / monitor connection, e.g.), or use a longer cord with a different terminal (to be exported).

The mains part also includes a cover, which prevents you from touching live parts under voltage and covers primary transformer terminals too.

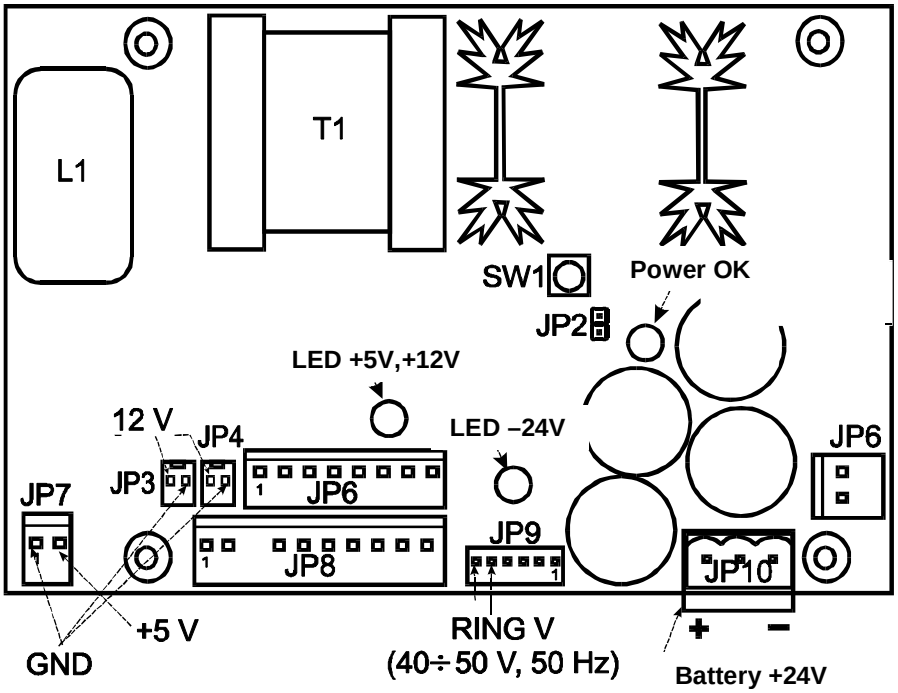
4.4. Mains Transformer

The transformer winding consists of two chambers (i.e. has an increased insulation strength).

4.5. Power Supply with Battery Back-Up (Main Power Supply Board)

The power supply with battery back-up is designed to provide a combined power supply to the gateway: from the mains and a back-up 24 V lead accumulator (there are usually two serially connected 12 V accumulators). For safety reasons, the accumulators are located in a plastic case outside the GW, refer to the Outer Battery Cover chapter. The recommended minimum capacity of the accumulator is 6 Ah. For the maximum load and operation time refer to the Technical Parameters chapter. The power supply also provides correct accumulator charging using a method prescribed for maintenance-free lead-acid accumulators. This power supply can also be used for supplying the GW from the central 24 V battery with arbitrary polarity against the ground (includes galvanic isolation) or (using a special converter) from the central 48 to 60 V battery. Moreover, the power supply features a high mains

voltage fluctuation and short-time power outage tolerance (works as an on-line UPS). The main board contains a single-acting forward converter, which generates the four



required voltage levels: +12 V, + 5 V, -12 V, and -24 V, extension module filters and accumulator-charging circuits. The SW1 button is used for turning the power supply off while batteries are connected and disconnected.

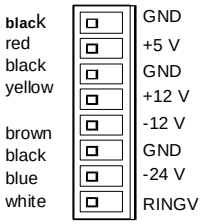


Fig. 7: *Power Connector JP6 Pin Map*

NOTE: If back up batteries are to be connected, it is necessary to enhance the power supply with a ringer module. This module is ordered separately.

4.6. Display

The display printed-circuit board (PCB) is mounted inside the GW plastic cover and is connected to the motherboard using a flat cable.

The LEDs indicate the following CO/GSM interface statuses:

-no light	-rest status of all CO/GSM lines
-permanent green light	-analog CO line is busy
-flashing green light	-analog CO line is defective
-permanent red light	-GSM line is busy
-flashing red light	-GSM line is defective

4.7. 19“ Rack Display

The display for the 19“ rack MOBILITY Extension version differs from the standard display in that, in addition to standard LEDs 1-8, it contains:

-two "seven-segment" displays– firmware version display (after RESET);

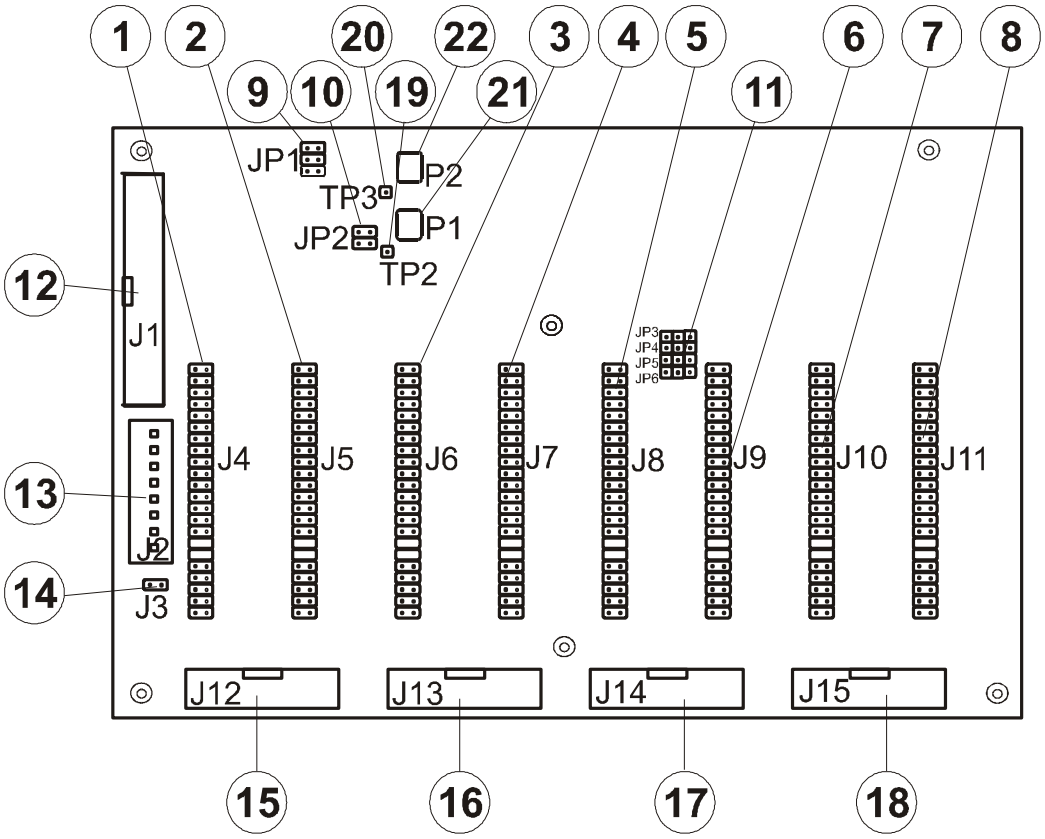
- date and time displays (the time display is interrupted by a date display every minute);

- an RS232-COM serial link output;

- an accounting buffer status LED indicator (green 0-50%, orange 50-75%, red 75-100%).

5. Extension Module

This module allows to extend the gateway with another 16 lines (8 modules with interfaces).



1 - 8. Connectors **J4-J11** for modules with line interfaces (CO lines, subscriber lines, GSM modules).

J4, J5, J6, J7 – These connectors are reserved for GSM boards.

J8, J10 - These connectors are reserved for CO Line Modules.

J9, J11 - These connectors are reserved for Subscriber Line Modules.

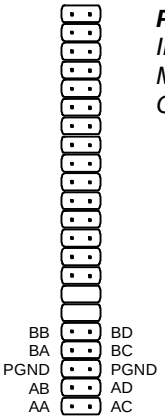


Fig. 8: *Interface Module Connectors*

9. **JP1** - Jumper – all open (not used).

10. **JP2** – Extension module address jumper

CAUTION! This jumper must always be connected in agreement with jumpers JP3 – JP6*!!!*

11. **JP3 – JP6** – Jumpers for connection of DTMF circuits to buses. There are four DTMF circuits on the extension module that are connected according to the Fig. 10

    extension module 1…….to buses 5…8,

    extension module 2 ……. to buses 9…12

    extension module 3 …….not connected

Fig. 09: *JP2 – Extension Module Address Setting*

12. **J1** – Motherboard connector (using a ribbon cable).
13. **J2** – Supply connector. Here you can check supply voltage values. Common measuring tips can be inserted in the terminal body chambers (see Fig. 23).
14. **J3** - Jumper – always open (intended for burn-in testing – GND and PGND connection).
15. **J12** – Primary distribution module connector – wires A and B of interfaces in connectors (1)…(4) (see Fig. 24).
16. **J13** – Auxiliary distribution module connector – wires C and D of interfaces in connectors (1)…(4), (see Fig. 13).
17. **J14=J12**
18. **J15=J13**
19. **TP2**-Test pin
20. **TP3** – Test pin

Fig. 10: *DTMF Receiver – Bus Connection in Dependence on Extension Module Address*

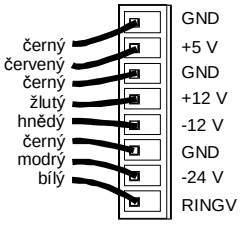


Fig. 11: *Supply Connector Wiring*

In addition to connectors, sockets, and jumpers described in the geography above, the extension modules contains the following important circuits:

- 4 DTMF receivers (tone dialling)
- 12 x 16 cross-point switch matrix for 16 interfaces

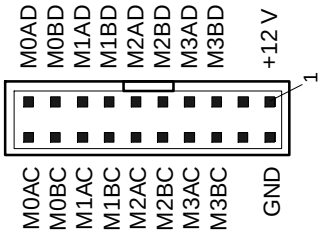


Fig. 13: *Auxiliary Distribution Module Connector*

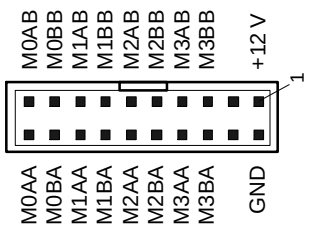


Fig. 12: *Primary Distribution Module Connector*

6. Interface Modules

Tab. 1 - Available

Order No.	Module Name
1842220	2 CO line module
1842232	2 GSM 900/1800 MHz module
1842233	2 GSM MC45 900/1800/1900 MHz module
1842230	ISDN S_0 module

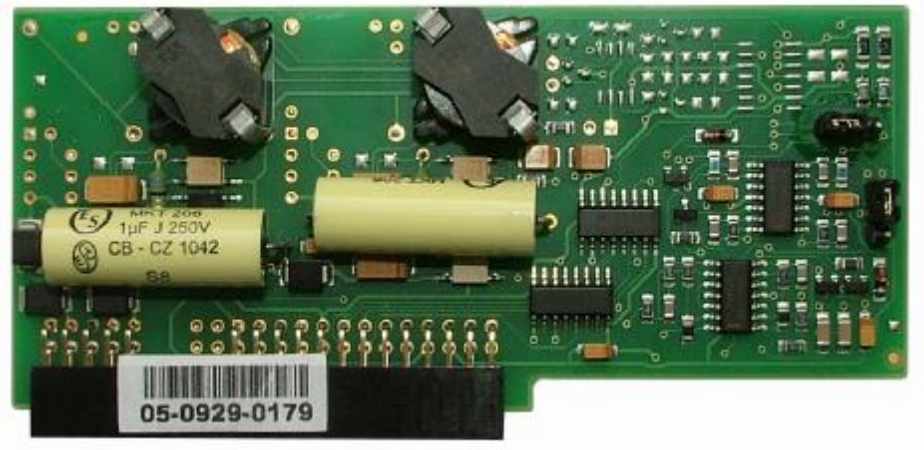
General Features

Every module contains two lines. The modules are equipped with the 2nd stage overvoltage protection that assumes that the module is connected via an extension module that is provided with the 1st stage overvoltage protection (rough protection). All modules are equipped with an identification system that allows the gateway software to identify the particular configuration upon power up. All module connectors contain two pairs of blank/pre-pressed holes (without contacts) to avoid incorrect insertion of the modules.

6.1. CO Line Module

order No. 1842220

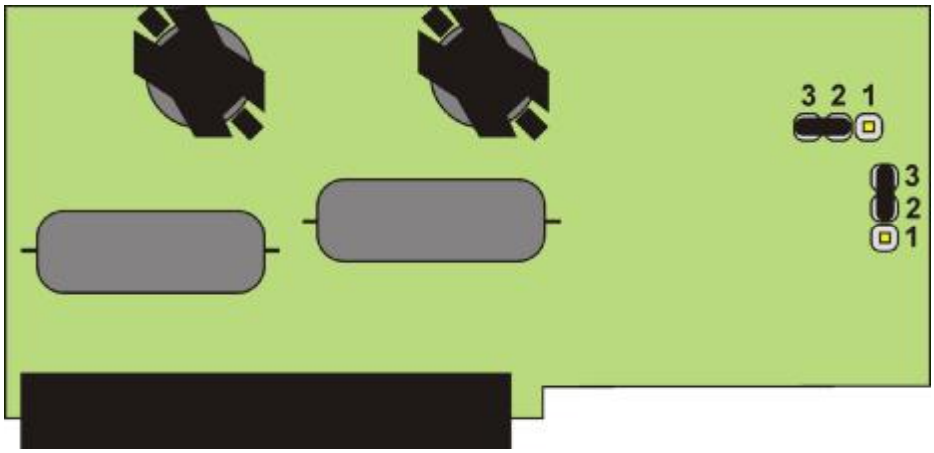
CO line interface with data transmission support for up to 56 kBps.



Tab. 2: Overview – Interface Module LED Signalling:

Module Type	No light	LED on	LED flashes
Subscriber line	hung-up	line seized	pulse dialling
CO line	No signalling. Any CO line seizure / hung-up status signalling is on the gateway display.		

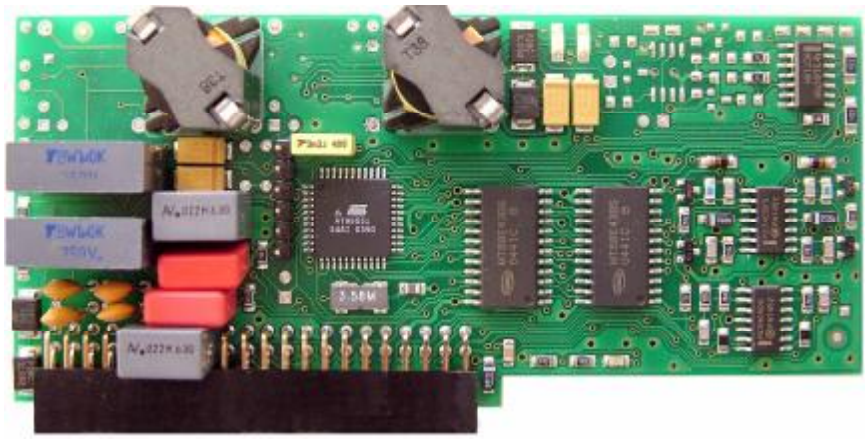
You may change impedance of this module according to opponent connected device (complex/ 600 Ohm).
To change the impedance, use the jumpers at the right side of the module.
Position 2-3 = complex impedance (default setting)
Position 1-2 = impedance 600 Ohm



6.2. 2 CO Line Module - CLIP

order No. 18421213

CO line module with a CLIP receiver. This module supports the Caller ID reception through FSK.



6.3. Internal GSM Board 900/1800 MHz for 2 GSM

order No. 1842232

This GSM gate module (Fig. 32) is installed in extender positions 5 to 8 and designed to connect up to two lines to a GSM network.

Each of the two lines in 2 GSM line modules works independently. A SIM card must be inserted for each line and an external antenna must be connected.

The GSM board is fed by the gateway power supply and uses industrial GSM Siemens modules.

SMA antenna connectors are fitted directly to chassis (when only one GSM board is used). If more GSM boards than one are used, you are advised to use an integrated antenna combiner. Be very careful while mounting the GSM board in order to avoid antenna cable damage.

The Siemens module supply is indicated by LED1 or LED2, its operation mode by LED3 or LED4 (see Table 3).

Up to four GSM boards can be installed in the gateway.

Tab.3

Permanent light on	No GSM board is connected to the interface, or, if so, no communication has been established.
Flashes in 2s intervals	The GSM board is functional but not logged in because: • the registration is in progress (max. 20s), • the SIM card has not been installed, • the PIN code has not been entered, • there is a weak signal on the installation site.
Flashes with 100ms intervals	The GSM module is functional, logged in.

6.4. 900/1800/1900 MHz GSM Module for 2 GSM

Order No. 1842233

A GSM module designed for the 19" rack 2N^{Ò} – MOBILITY Extension version.

The GSM module is mounted into positions 9 to 12 (J8-J11) on the extending module and connects up to two lines to the GSM network.

The two GSM lines work independently. A SIM card must be inserted for each of them.

The GSM module is fed from the gateway power supply. The core of this GSM module is an industrial dual GSM module SIEMENS MC45.

The module supply status is indicated by LED1 or LED2, the module operation mode by LED3 or LED4 (see Table 3).

Always use a 2/1 or 4/1 antenna combiner respectively for YAGI GSM antenna connection, depending on the number of GSM modules employed.

Up to four GSM modules can be installed in the gateway.

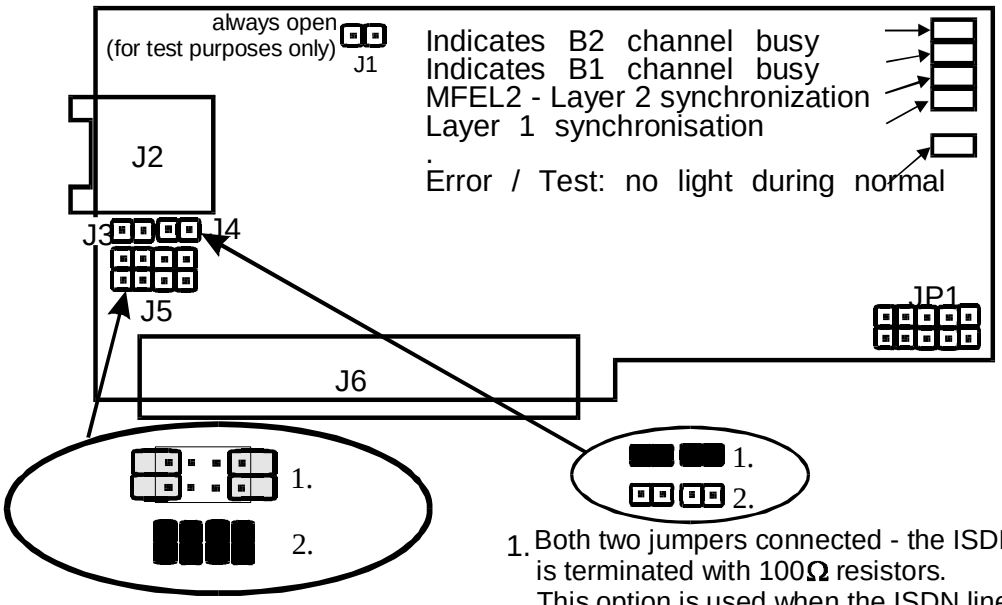
6.5. ISDN S_0 Module

Order No. 1842230

The module contains one 4-wire BRI interface, or 2B+D, which enables establishing of two calls at the same time. It is designed for connection to the public ISDN and supports both the PTP and PTMP modes.

- In the **PTP** (Point-to-Point) mode, the DDI is supported (i.e. so many successive numbers as the user requests from the ISDN provider). No other ISDN terminal equipment can be connected to the line.
- In the **PTMP** (Point-to-MultiPoint) mode, the MSN addressing is supported.

The module is equipped with an RJ-45 connector, which can be used if the network terminator box (NT1, NTBA) is directly at the ME, i.e. the connecting cable is not longer than 3 m.



1. Non-connected jumpers - the ISDN line leads to J2 only.

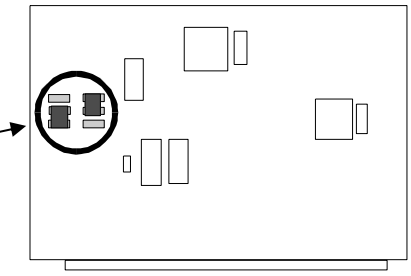
1. Both two jumpers connected - the ISDN line is terminated with 100Ω resistors.
   This option is used when the ISDN line is terminated here, always in PTP connections, e.g..
   WARNING! Only on condition that the terminating resistors ARE NOT in the ISDN wall socket or other ISDN terminal equipment!
2. Non-connected jumpers - the 100 Ω terminating resistors are disconnected.

6.6. Voice Module

Part No. 1842530

The purpose of the voice module is to store and replay user-recorded Mobility Extension voice messages. A message can be recorded during an incoming call to the ME by a defined user. The module is available with a default voice message. The module features a high voice fidelity (voice is not distorted „digitally“) and a non-volatile FLASH memory. This means that you can remove the module and put it into another 2N – Mobility Extension without losing your record. You can record up to 8 voice messages of a variable length, keeping the maximum total length of 20 seconds.

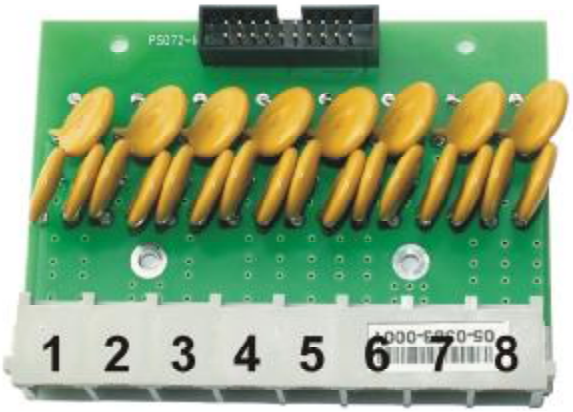
Position of jumpers for allowed recording



Insert the module in position J10 or J11 on the motherboard.

6.7. Distribution Module with RJ-12 Connectors, 2 Wires, 8 Lines

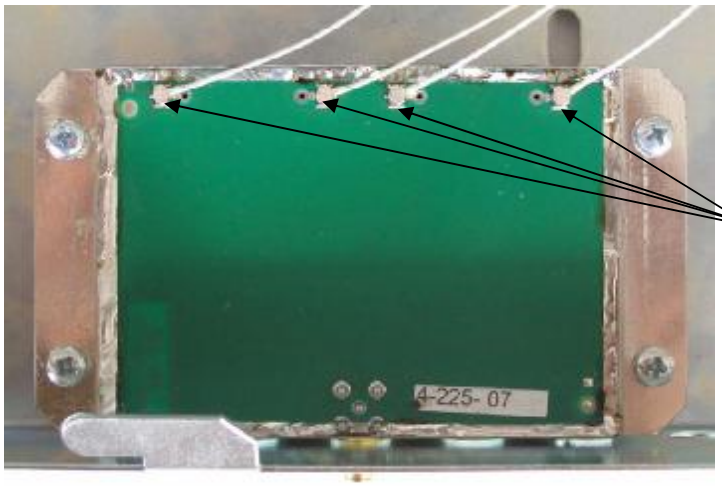
Order No. 1842240



A module for connection of eight internal or CO lines without emergency switchover. The connectors are connected from right to left (1-8) and their positions correspond 1:1 to line modules mounted in ME. This means that port 1 of the line module corresponds to port 1 of the distribution module, etc..

6.8. Antenna Combiner

With this module it is possible to connect 1 (2/1 order No. 184252) or 2 (4/1 order No. 184254) GSM boards to one GSM antenna.

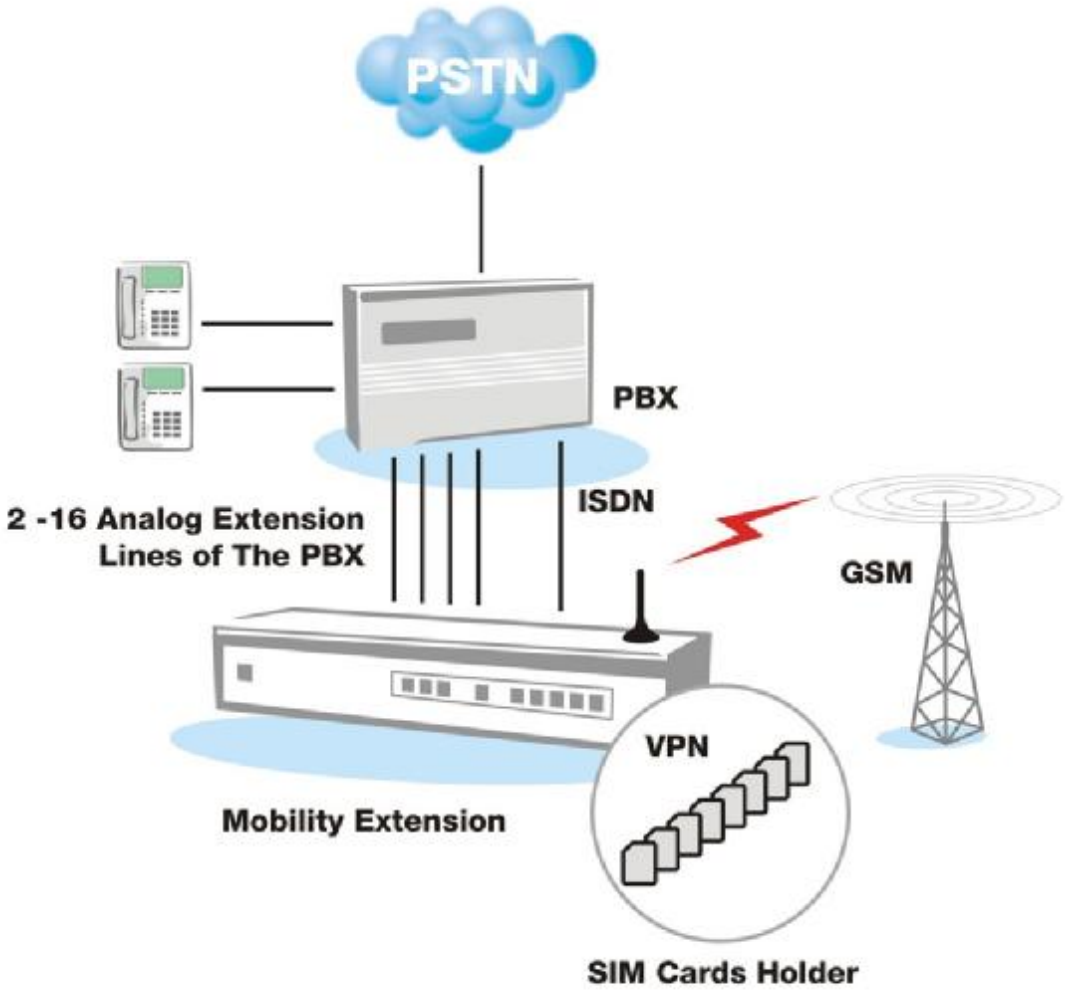


SMA antenna

7. PBX Connection

To connect the 2N^{Ò} - MOBILITY Extension to an existing PBX take the following steps:

1. Interconnect the free internal lines of your PBX with the CO line module in the MOBILITY Extension using a distribution module.
2. If you require an overflow calling back to the PBX using the ISDN, then interconnect the ISDN-BRI interfaces (set the ISDN-BRI as the NT in your PBX).
3. Connect the GSM antennas and insert your SIM cards in the GSM modules.

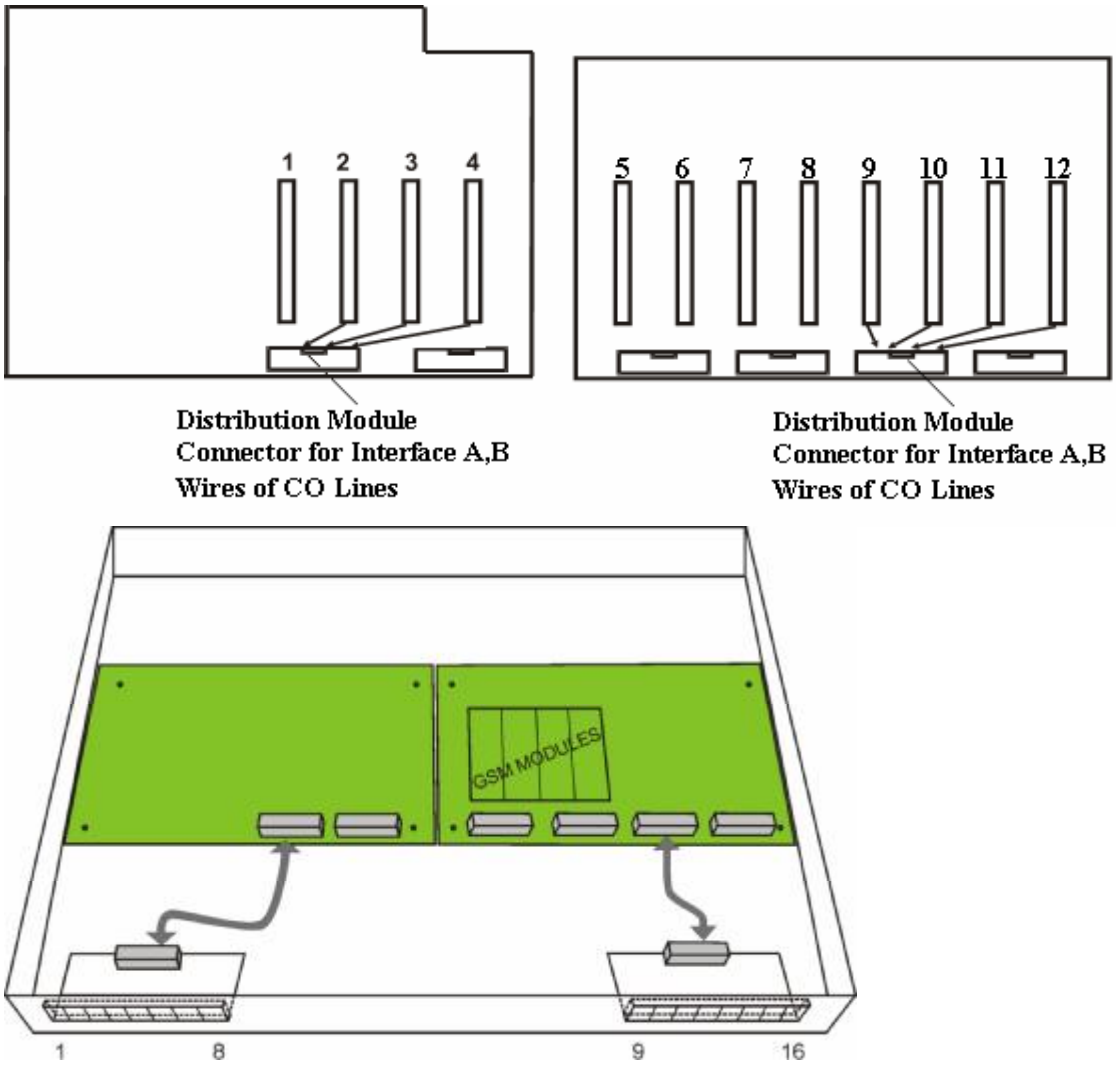


7.1. Recommended 2N - MOBILITY Extension Setup

We recommend you to assemble the wall-mounted **2N - MOBILITY Extension to 24 ports** as follows:

- insert 1-2 ISDN modules in positions 1-2 on the motherboard;
- insert1-4 GSM modules in positions 5-8 on the extender board;
- insert 1-4 CO modules in positions 9-12 on the extender board.

Where the ISDN overflow call is not used, 1-4 CO line modules can be inserted in free positions 1-4 on the motherboard.

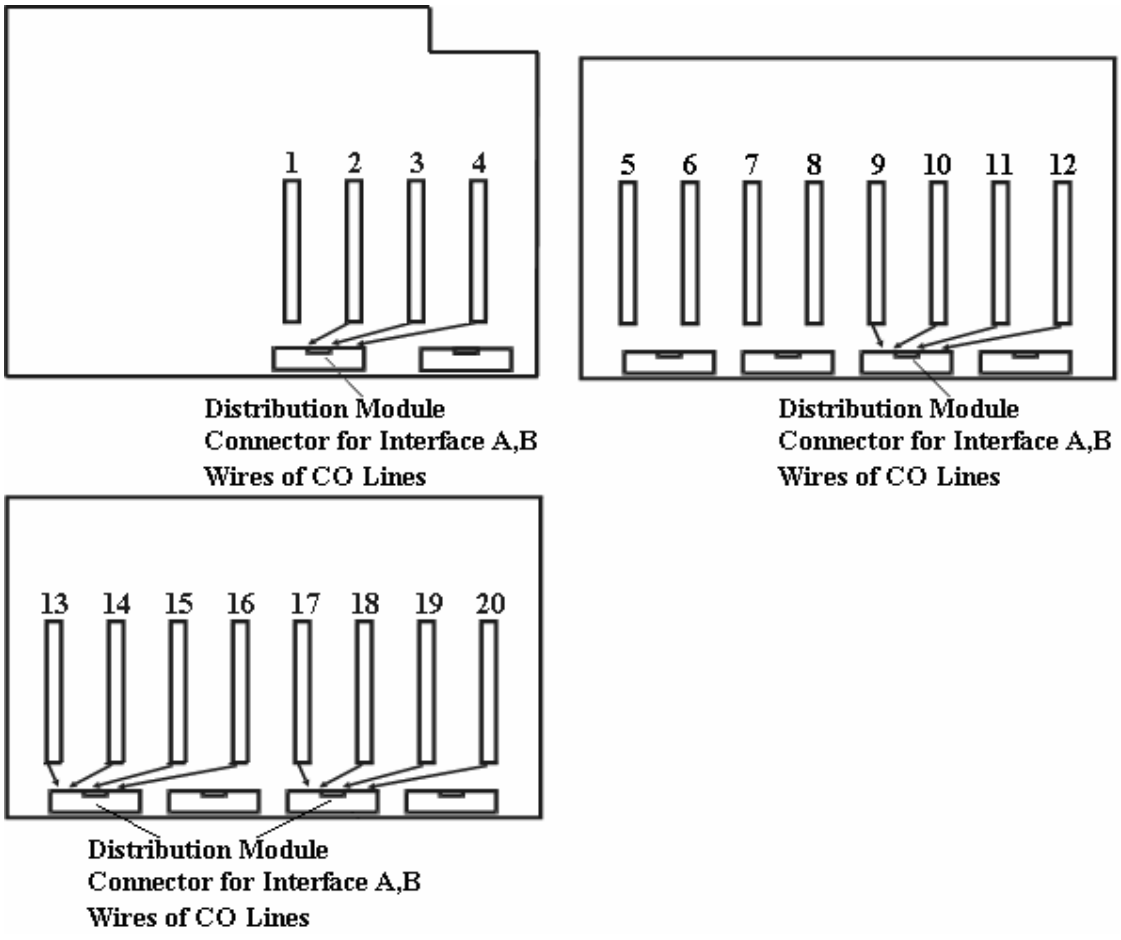


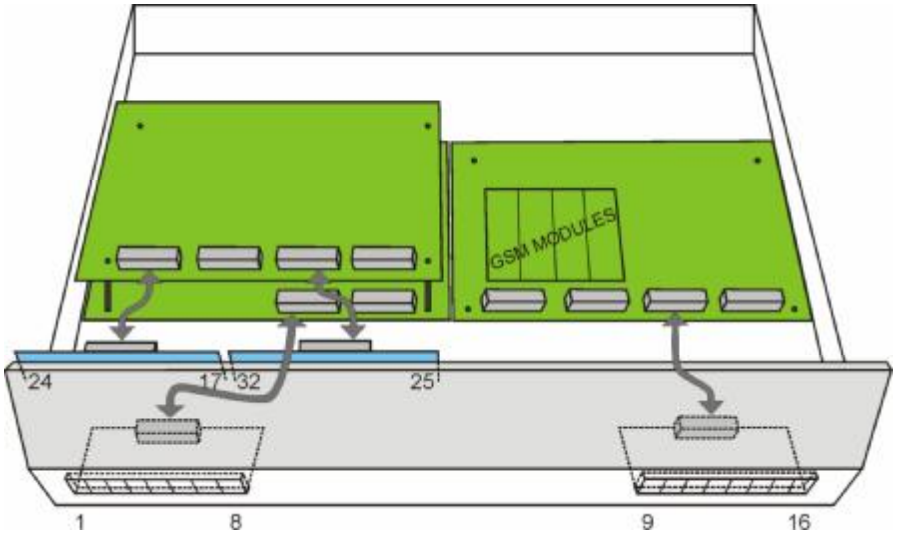
We recommend you to assemble the wall-mounted **2N - MOBILITY Extension to 40 ports** as follows:

- insert 1-2 ISDN modules in positions 1-2 on the motherboard;
- insert1-4 GSM modules in positions 5-8 on the extender board;
- insert 1-4 CO modules in positions 9-12 on the extender board.
- insert 1-8 CO modules in positions 13-20 on the extender board.

Where the ISDN overflow call is not used, 1-4 CO line modules can be inserted in free positions 1-4 on the motherboard.

! Be sure to set the address and DTMF detectors properly for the extender boards ! (JP2-JP6 - p. 18)



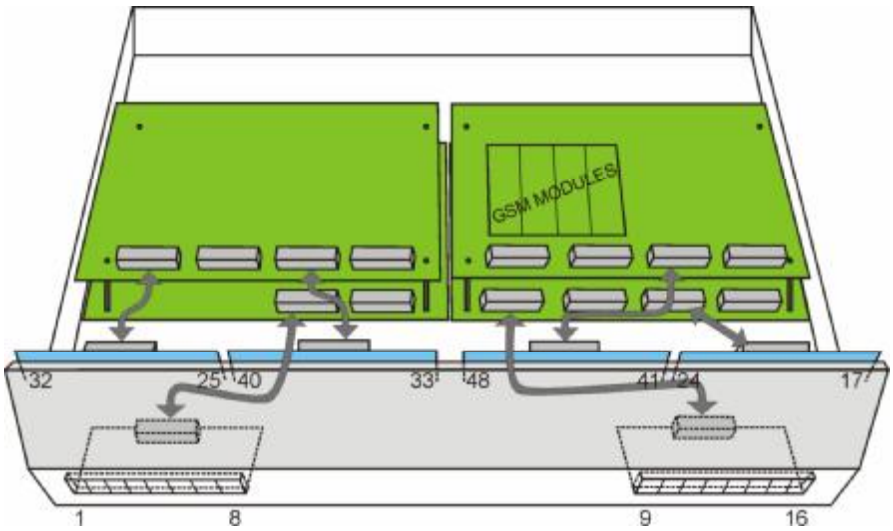


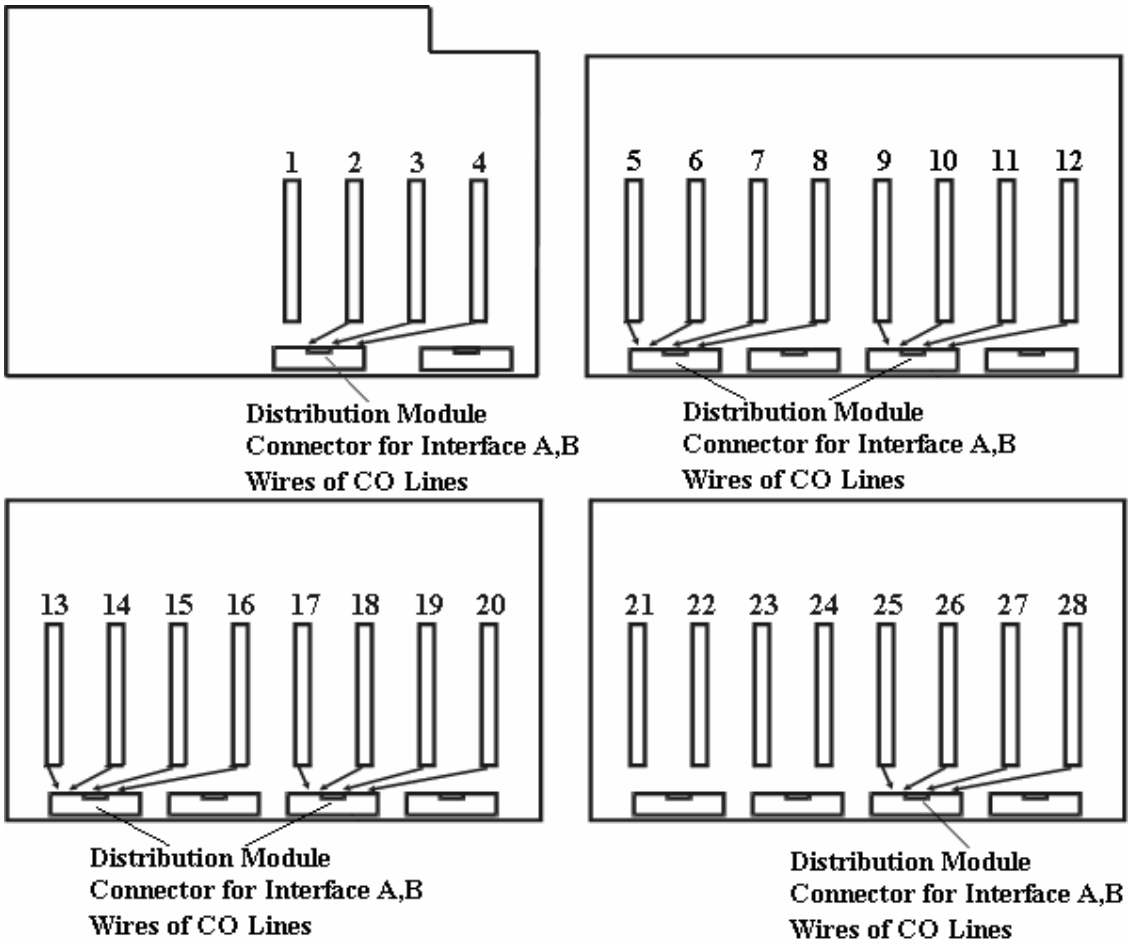
We recommend you to assemble the wall-mounted **2N - MOBILITY Extension to 56 ports** as follows:

- insert 1-2 ISDN modules in positions 1-2 on the motherboard;
- insert 1-8 CO modules in positions 5-12 on the extender board;
- insert 1-8 CO modules in positions 13-20 on the extender board;
- insert1-4 GSM modules in positions 21-24 on the extender board;
- insert 1-4 CO modules in positions 25-28 on the extender board.

Where the ISDN overflow call is not used, 1-4 CO line modules can be inserted in free positions 1-4 on the motherboard.

! Be sure to set the address and DTMF detectors properly for the extender boards ! (JP2-JP6 - p. 18)

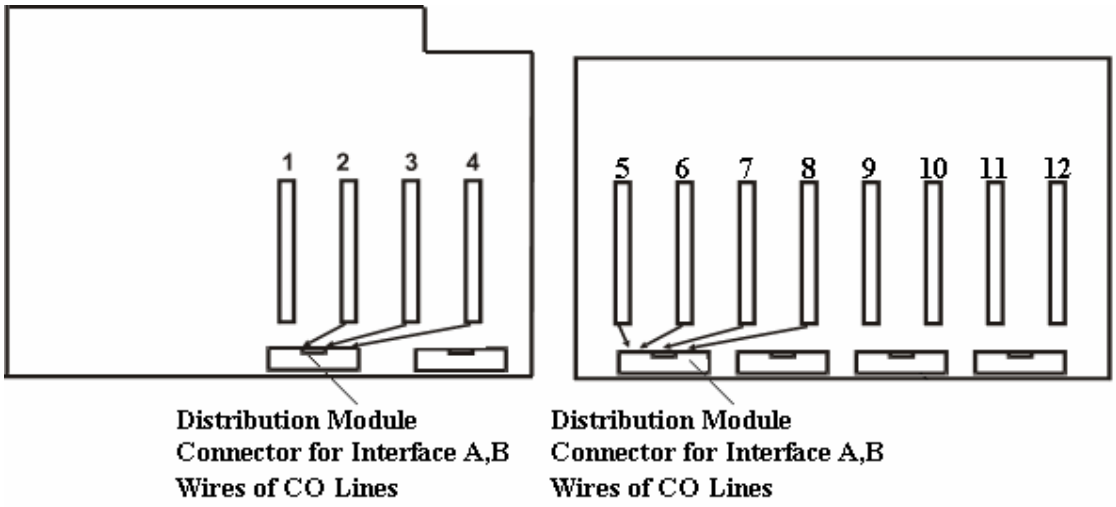



1 2 3 4
Distribution Module
Connector for Interface A,B
Wires of CO Lines
5 6 7 8 9 10 11 12
Distribution Module
Connector for Interface A,B
Wires of CO Lines
13 14 15 16 17 18 19 20
Distribution Module
Connector for Interface A,B
Wires of CO Lines
21 22 23 24 25 26 27 28
Distribution Module
Connector for Interface A,B
Wires of CO Lines

We recommend you to assemble the **19" rack 2N - MOBILITY Extension** as follows:

- insert 1-2 ISDN modules in positions 1-2 on the motherboard;
- insert 1-4 GSM modules in positions 9-12 on the extender board;
- insert 1-4 CO modules in positions 5-8 on the extender board.

Where the ISDN overflow call is not used, 1-4 CO line modules can be inserted in free positions 1-4 on the motherboard.



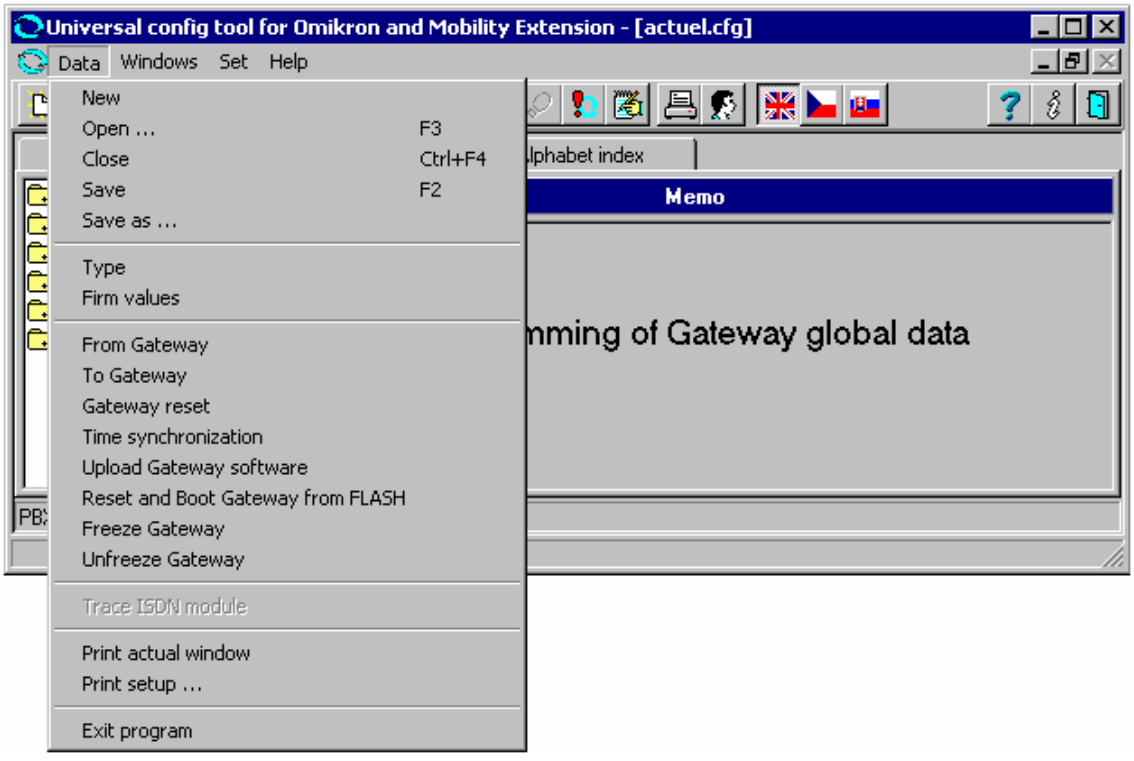
8. Programming

For configuration use the Universal config tool for OMIKRON and MOBILITY Extension.

8.1. Universal config tool for OMIKRON and MOBILITY Extension

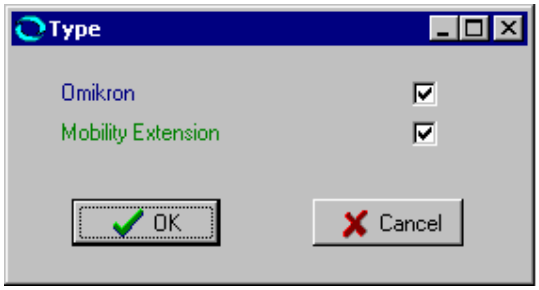
The Universal config tool for OMIKRON and MOBILITY Extension basic menu contains the following items:

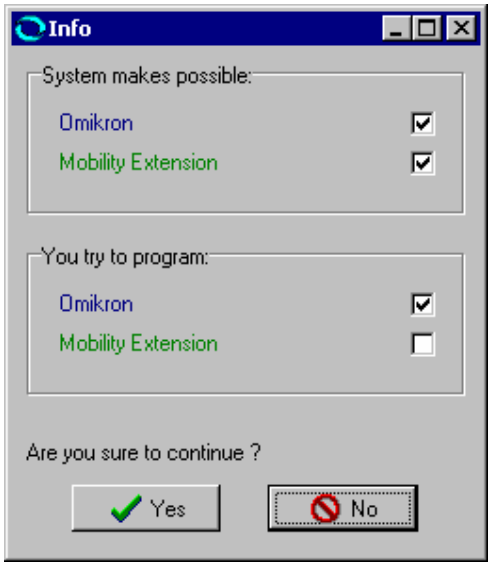
8.1.1. Data



- *New* Create a new GW configuration file.
- *Open…* Open an existing configuration file.
- *Close* Close an open window with the configuration file.
- *Save* Save the configuration.
- *Save as…* Save the configuration under another name.

- *Type* Select the OMIKRON / MOBILITY Extension type for your new configuration. The type is checked during configuration uploading into the gateway and a warning gets displayed if no match is found.





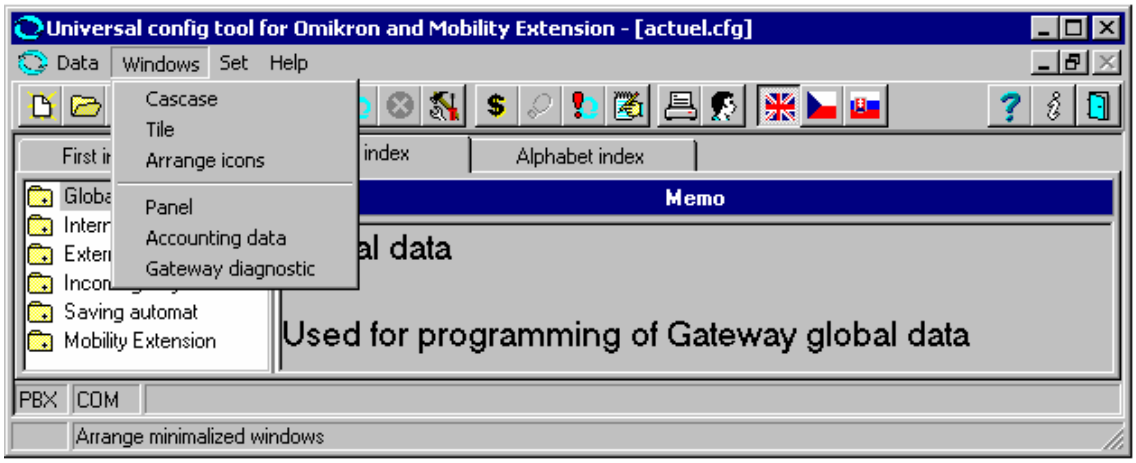
- *Firm values* Set default values.

- *From Gateway* Download configuration from the GW.
- *To Gateway* Save the configuration to the GW.
- *Gateway reset* Reset the GW (like upon turn off/on).
- *Time synchronisation* Time setting according to the PC with which the GW is connected.
- *Upload Gateway software* Upload firmware to the Flash memory.
- *Reset and Boot Gateway from Flash* Reset the GW with the support of firmware in the Flash and copy into the RAM.
- *Freeze Gateway* The GW passes into the service mode. All current calls are waiting for termination and no other calls can be initiated. Then, you can turn the GW off and execute service functions. To put the GW into the operational mode, send the "Unfreeze Gateway" command, or power up the GW with the mains switch if it is powered off.
- *Unfreeze gateway* Return to the operational mode.

- Print actual window Print the active window.

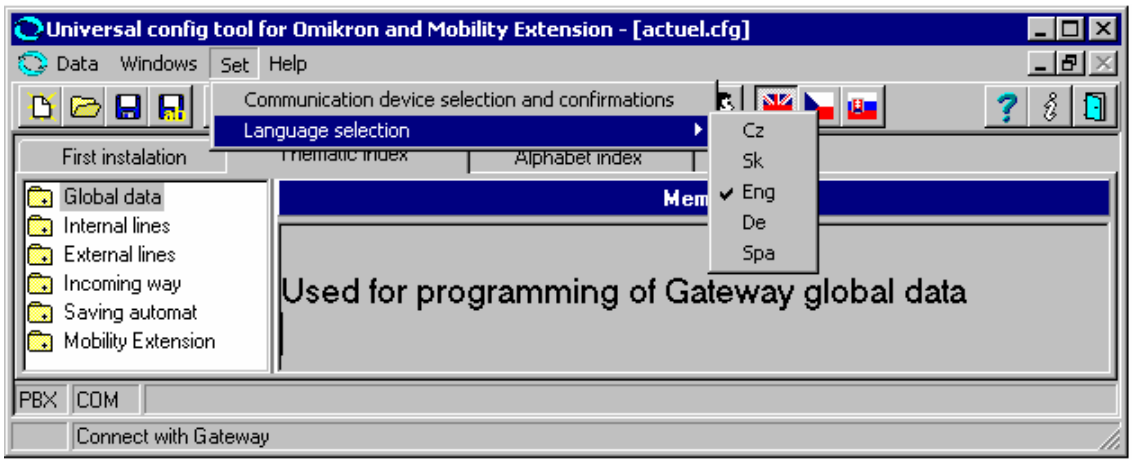
- Printing sets — Print the selected printing set.
- Print setup — Set up the printer connected.
- Exit program — Terminate the Universal config tool for OMIKRON and MOBILITY Extension activities.

8.1.2. Windows



- Cascade — Group windows in a cascade.
- Tile — Group windows without overlapping.
- Arrange icons — Arrange icons (minimised windows) if more configuration files are open.
- Panel — Displays line statuses.
- Accounting data — Displays data on calls.
- Gateway diagnostics — Displays log-system messages (error messages, ...).

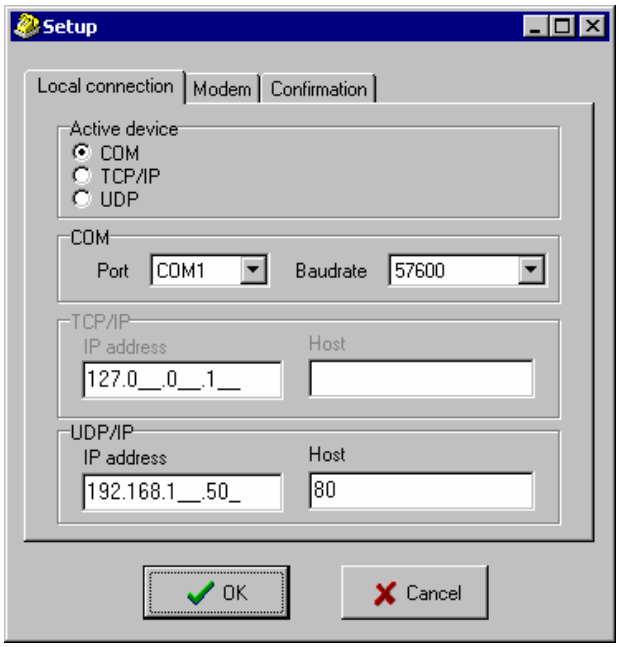
8.1.3. Settings



Select communication device and confirmations

8.1.4. Local Connection

Used for setting of GW connection to the program.

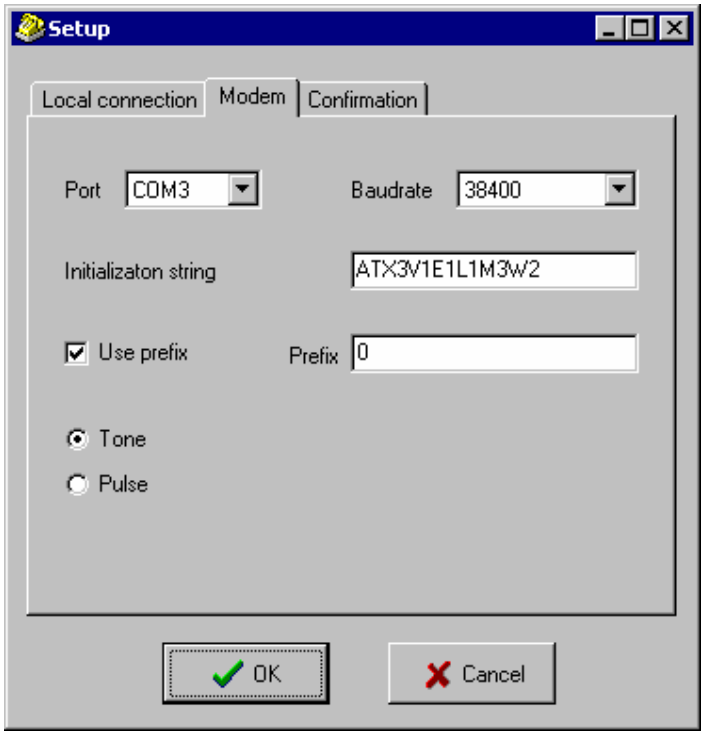


- Active device -COM –direct connection using an RS232 serial port
  -TCP/IP –connection to logged-in XAPI Server
  -UDP -connection using an RS232 - TCP/IP converter

- COM -COM port assignment to the PC to which the GW is connected
- COM baud rate -set the communication rate with the GW
- TCP/IP -set the IP address of the PC where the XAPI Server is running
- Host -name of the PC where the XAPI Server is running (need not be completed if the correct IP address has been entered)
- UDP/IP -set the IP address of the converter module connected to the GW serial port
- Port -connection port

8.1.5. Modem

Used for setting communication with the PC modem for remote GW connection.



- Port –assign the serial interface to which the PC modem is connected
- COM baud rate -set the modem communication rate
- Initialisation string -set the modem
- Use prefix -use the defined prefix for dialling
- Prefix -characters to be dialled before the subscriber number (e.g. 0 for the PSTN, ^ for Speakerphone, ...)
- Tone -tone dialling
- Pulse -pulse dialling

8.1.6. Confirmation

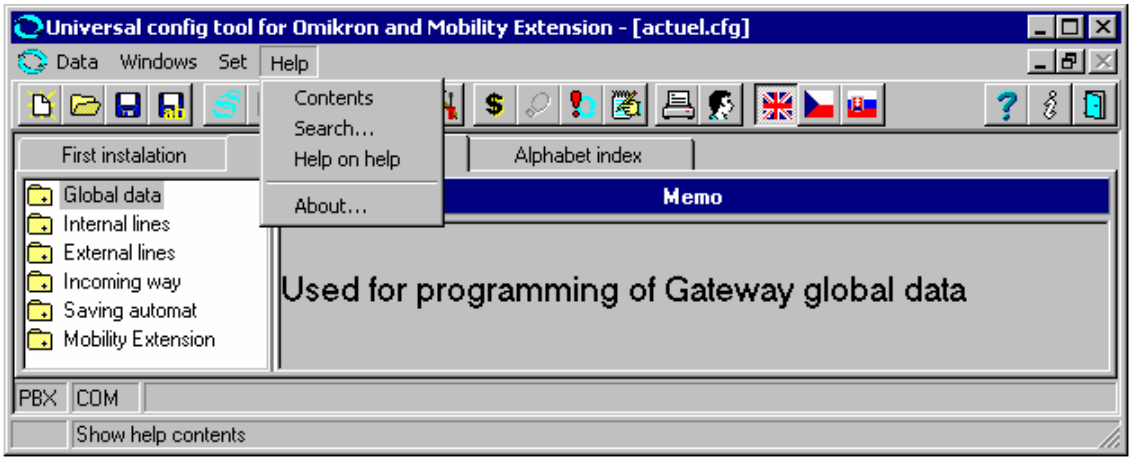
Enable the confirmation dialogue for loading configuration to/from the GW.

Setup
Local connection
Modem
Confirmation
Confirm dialog for Import
Confirm dialog for Export
OK
Cancel

8.1.7. Language Selection

Set the program environment into the required language.

8.2. Help



- Contents contents of the help
- Search… words in the help
- Help on help general instructions for use of the OS WIN help
- About application information on the Program version

9. 2N - MOBILITY Extension Programming Charts

The following sections describe programming parameters of the 2N - MOBILITY Extension.

You have to know the password to access the ME programming mode. The Universal config tool for OMIKRON and MOBILITY Extension enables **two** types of users to change the ME configuration.

User Password of the Supervisor Type

A user with the **Supervisor** authorisation has access to all ME parameters and may even change the **User** password.

User Password of the User Type

A user with the **User** authorisation may change some ME parameters only and the **User** password.

This user may access all parameters for reading only.

List of parameters that may be changed by the **User**:

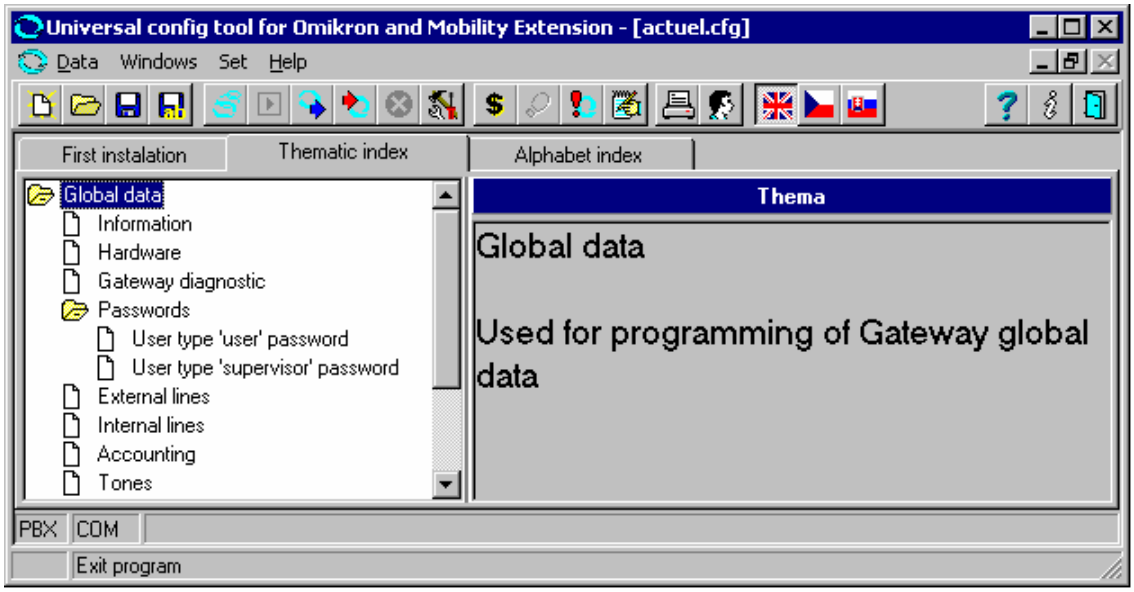
- Subscriber lines -assignment of SL to departments
  -FLASH and dialling type for SL
- CO lines -name and dialling type
  -reloading of free minutes
- Digital CO lines -name
  -CLIP option
  -PIN
  -AT commands
  -prefix
  -reloading of free minutes
- Incoming -assign the Ringing Chart
- Automatic cost-saving machine -bank holidays

*Both the user passwords are **1111** by default.*

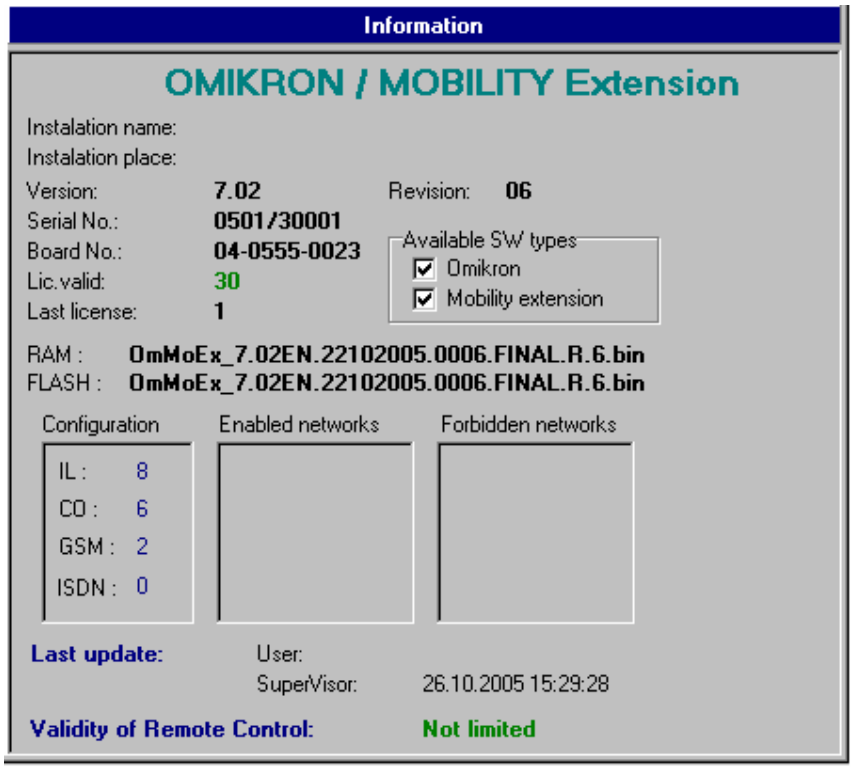
Remember the password well because you cannot program the ME without knowing it !

9.1. Global Data

Used for programming of ME global parameters.



9.1.1. Information



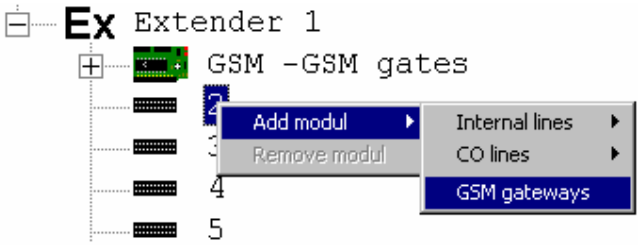
This item informs you of the GW configuration to be programmed.
You can find here: -SW version and revision numbers
-serial number of the GW you are connected to

-GW CPU board number
-SW expiry date
-serial number of the most recent license
-time to the end of remote control access to the GW
-exact name of the GW firmware stored in the RAM and FLASH (this name is identical with the name of the file used for firmware upgrade)
-installation name and site (if completed)
-configuration (ports of modules used)
-list of enabled and disabled networks
-last data record for each user type
-information on remote access made

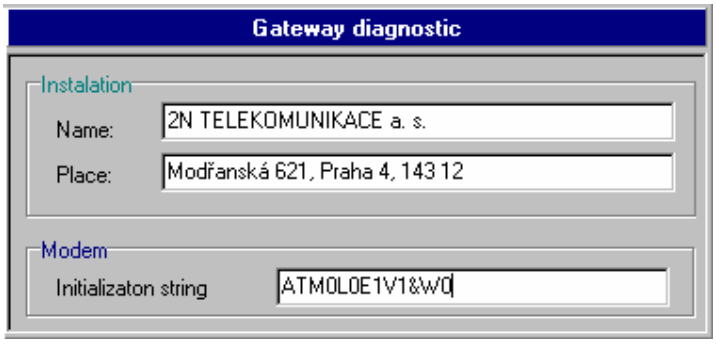
9.1.2. Hardware

Information on the physical configuration of the GW, including types of modules mounted on all GW positions. You can add and remove modules here to change the GW configuration. The easiest way, however, is to download the actual configuration directly from the GW.

Click on the square with the /+/ symbol to open the required item and on the square with /-/ to close it. To add or remove a module press the right-hand mouse button on the proper place.



9.1.3. Gateway Diagnostics



Complete the GW installation site in the *Installation* section (for data see the Information window).

In the *Modem* section*:*

Initialisation string -set the remote control modem module here. The default setting is made by the manufacturer and need not be changed.

9.1.4. Passwords

9.1.4.1. Supervisor Password

A table for changing the supervisor password.

A user with the **Supervisor** authorisation has access to all GW parameters and may even change the **User** password.

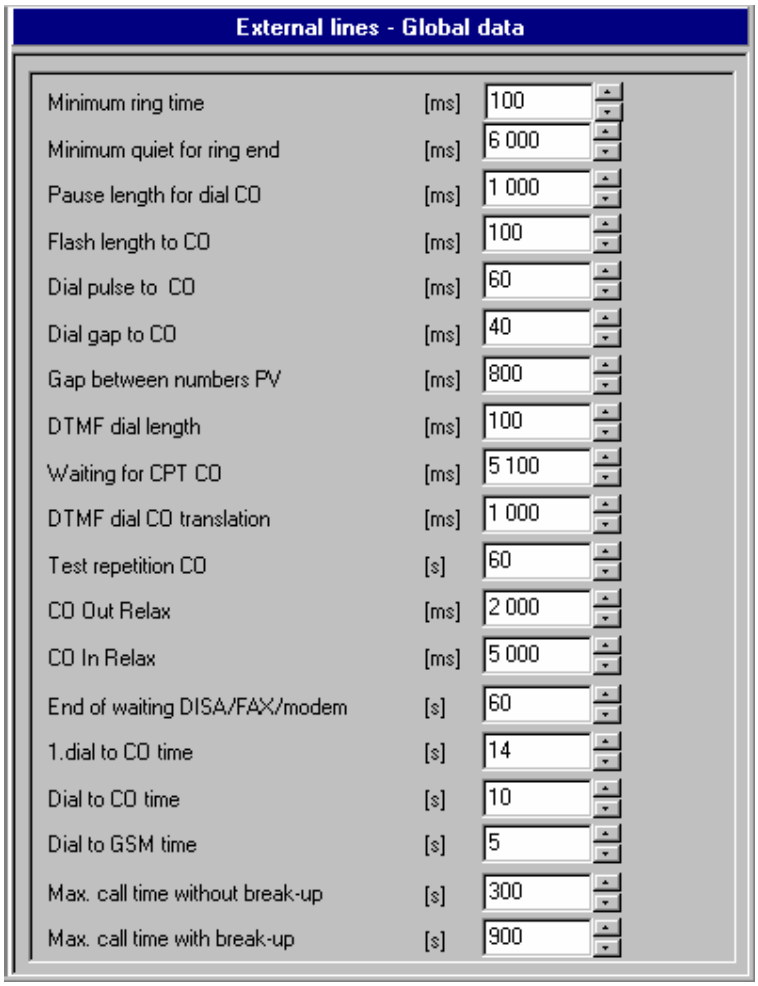
9.1.4.2. User Password

A user with the **User** authorisation may change some GW parameters and the **User** password only.

This user may access all parameters for reading only.

9.1.5. CO Lines

Global parameters of CO lines:

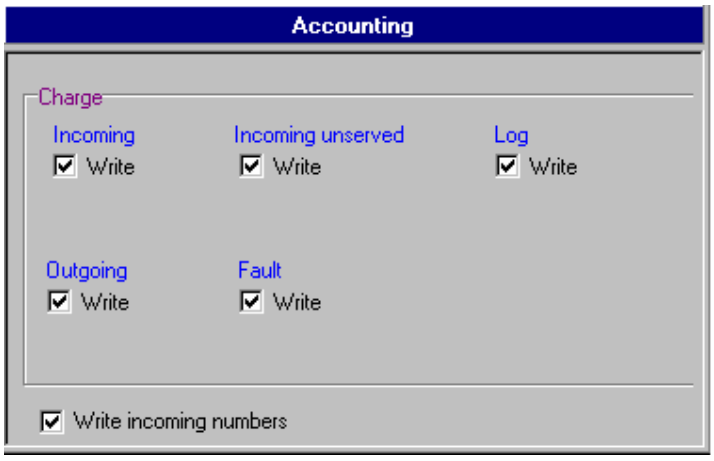


- **Minimum ringing time.** Defines how long continuous ringing from a CO line should be detected for the CO line to be declared as ringing.
- **Minimum quiet for ring end.** It is a CO line ringing pause after which the CO line ringing is considered terminated.
- **Pulse length for dial CO.** Enters a pause between digits to be dialled. Used for digits added in abbreviated dialling and for route detection.
- **FLASH length to CO.** Sets the length of the FLASH signal generated by the PBX into a CO interface.
- **Dial pulse to CO.** Sets the length of the dialling pulse into a CO interface.
- **Dial gap to CO.** Sets the length of the pulse dialling gap into a CO interface.

- **Inter-digit gap for pulse dialling.** Sets the inter-digit gap for pulse dialling into a CO interface.
- **DTMF dial length.** Sets the length of the DTMF dialling into a CO interface. This value also defines the DTMF dialling pause.
- **Waiting for CPT CO.** Defines the maximum timeout during which the PBX attempts to detect the CO dialtone indicating the CO interface function.
- **DTMF dial to CO translation.** A gap in the dialling of a subscriber tone line into a CO tone line after which the CO line dialling is cross-talked only.
- **CO test repetition.** Repetition of a defective CO line testing.
- **CO Out relax.** Minimum CO line hang-up timeout after an outgoing call.
- **CO In relax.** Minimum CO line hang-up timeout after an incoming call.
- **End of waiting for DISA/FAX/modem.** Timeout during which an incoming CO call is waiting after CNG detection (fax message) or dial-in for subscriber's release or answer for CO line hang-up, or continuation on another line of the Ringing Chart.
- **First dial to CO time.** Maximum timeout for dialling delay into a CO line. If no dialling occurs during this timeout, the CO line is hung up.
- **Dial to CO time.** Maximum timeout for delay in further dialling into a CO line. The time control is recovered upon every digit received from the internal subscriber. The dialling mode is changed into the calling mode after this timeout. If enabled so, the timeout (dialling) end is announced by a short beep. Any further dialling after this timeout is considered a service into the call.
- **Dial to GSM time.** Maximum timeout for delay in further dialling into a GSM line. The time control is recovered upon every digit received from the internal subscriber. The dialling mode is activated after this timeout. If enabled so, the timeout (dialling) end is announced by a short beep. Any further dialling after this timeout is considered a service into the call.
- **Max. call time - interfaces with disconnection signalling.** Maximum time call for two CO lines equipped with disconnection signalling.
- **Max. call time - interfaces without disconnection signalling.** Maximum time call for two CO lines without disconnection signalling.

9.2. Accounting

A form including types of calls recorded in the call memory.

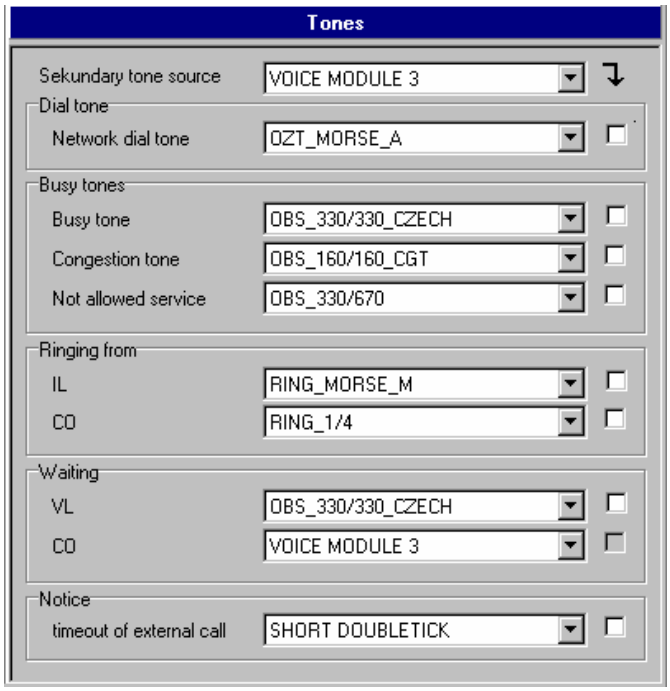


By selecting the **Write incoming numbers** item you enable recording of incoming numbers into the accounting line for interfaces that allow so.

With **Write whole numbers of private calls** you enable to record whole numbers of private calls.

9.2.1. Tones

In this window you can change tone and ringing types for each status. This function is intended for special applications above all.



Tone and ringing types:

Dialtone
- PSTN dialtone — simulated tone for ARS, reverse modem, internal GSM, ISDN in some cases

Busy tone
- Busy — the called subscriber is busy, service cannot be executed
- Congestion — network congestion (*from a CO line* – defective line, impassable network, wrong number, no credit; *calling to a subscriber line* – defective telephone, full queue, do not disturb, cannot be forwarded, reject)
- Unauthorised — unauthorised dialling (barred service or line, lock, dialling timeout, cannot be executed)

Ringing from a
- subscriber line
- CO line

Waiting tone
- SL — calling from a subscriber line
- CO — calling from a CO line

Ticking
- CO-CO end — a ticking tone follows the call end of two CO lines before disconnection

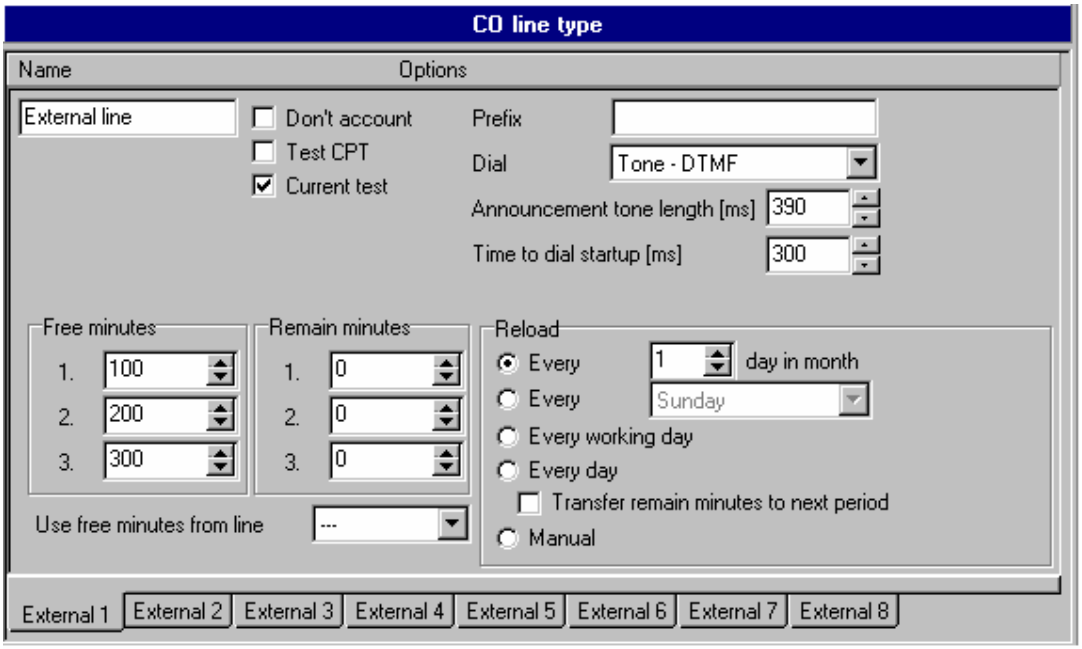
A negative influence, if any, on the PBX traffic as a result of unprofessional tone change, is signalled by a warning message on your screen before access.

9.3. CO Lines

Used for setting of all CO line parameters.

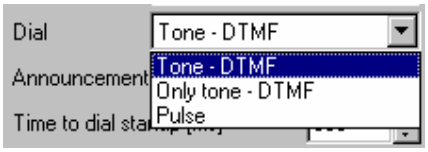
9.3.1. Line Types

Set the properties of analog CO lines in this chart.



Analog CO line

- **Name -** up to 14 characters for an analog CO line name
- **Don't account –** a line that shall not be billed
- **CPT test -** checks the CO line dialtone
- **Current test -** tests the line current upon seizure (for selected CO lines only)
- **Prefix -** up to 4 digits to be dialled first automatically after the outgoing line seizure (dial-in through a superior system). It is not written in the accounting line.
- **Dial -** sets the CO line dialling type.

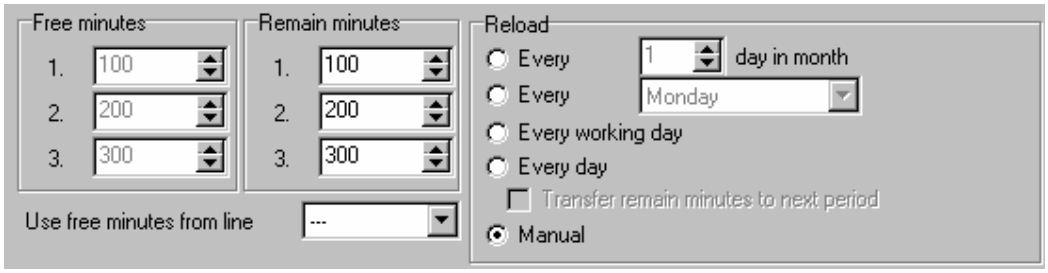


- **Dialtone length -** defines how long the CO dialtone has to be detected to indicate that the line is functional. If a "0" is selected, the tone is never checked and the line never reports an error.

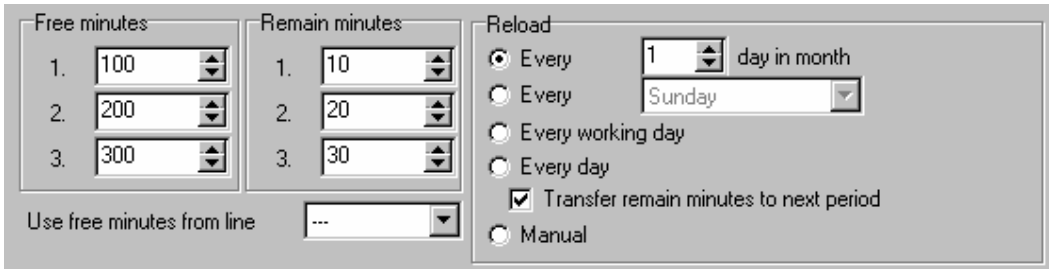
- **Time to dial start -** defines the minimum timeout after which dialling starts upon CO dialtone detection.
- **Starting free minutes** - free minutes divided into three parts according to the type. They are added to the remaining free minutes if defined so.
- **Remaining free minutes** – free minutes to be currently used.

- **Reload of remaining free minutes** - select the way how to reload the remaining minutes:

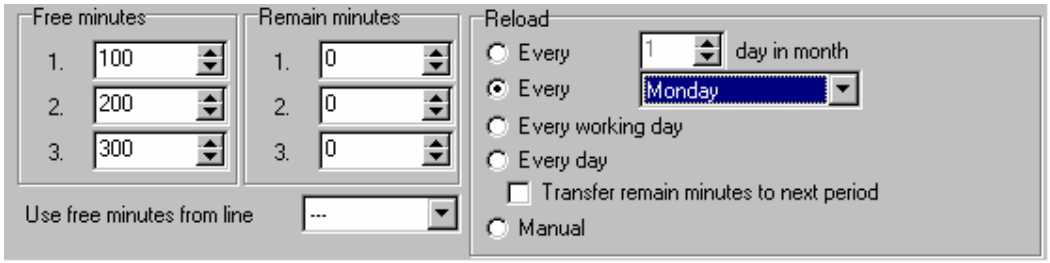
-*Manual* (to be reloaded in the program environment);



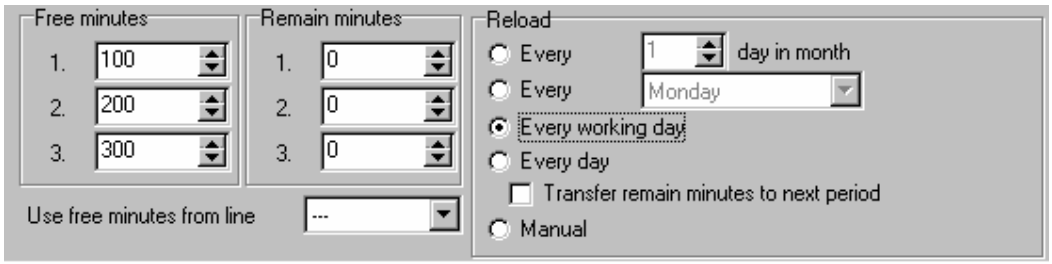
-*Every certain day in a month* (here enter the day in the month on which the remaining free minutes are to be set according to the starting ones. By enabling the *Transfer of remaining minutes to the next period* you add the remaining minutes from the preceding period to the starting free minutes).



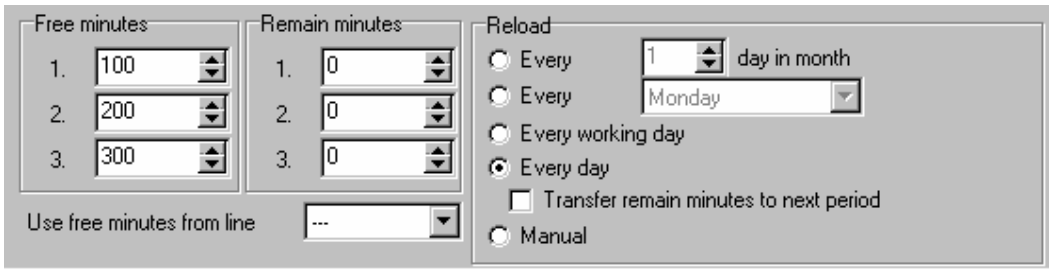
-*Every certain day in a week.(*here enter the day of the week on which the remaining minutes are to be set according to the starting ones).



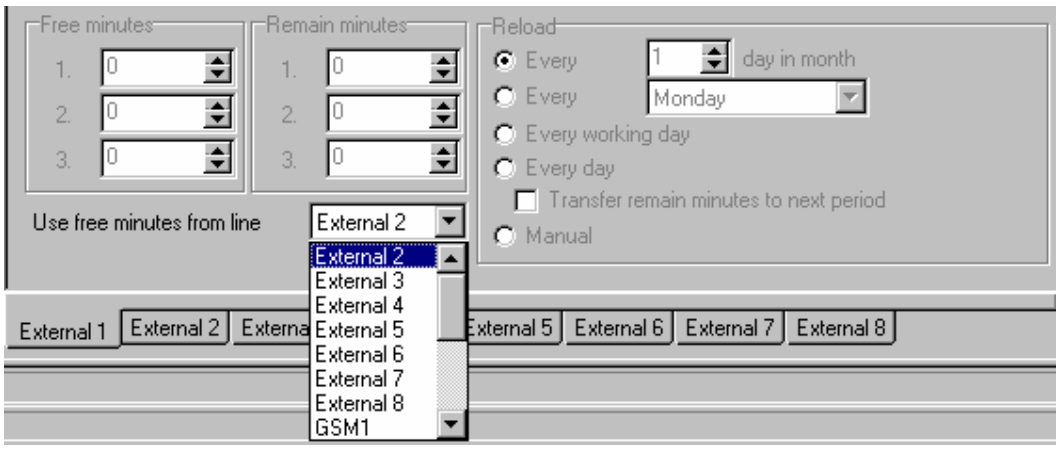
-*Every working day (*the remaining minutes shall be set according to the starting ones on every working day (Monday-Friday)).



-*Every day ((*the remaining minutes shall be set according to the starting ones on every day (Monday-Sunday)).

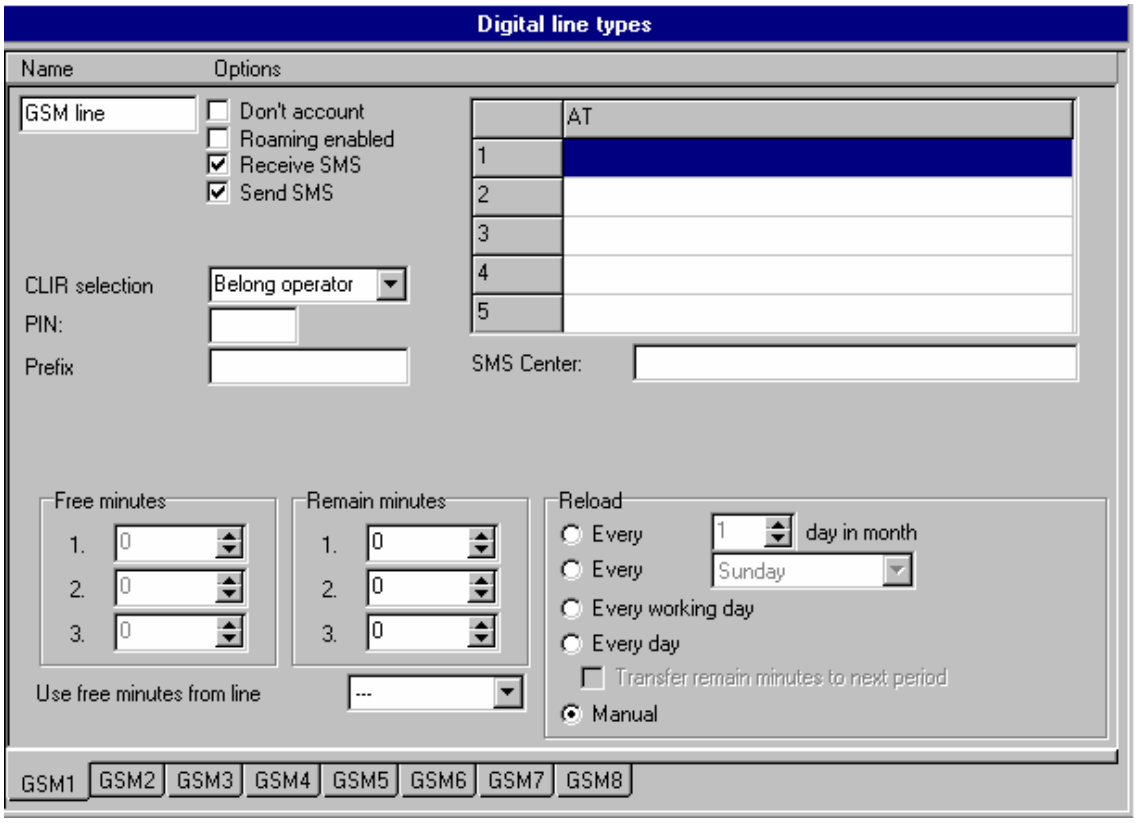


-*Use free minutes from line* (enable the use of free minutes from another line where free minutes are set. Select a line from the List of external lines).



9.3.2. Types of Digital Lines

Set the GSM lines here.



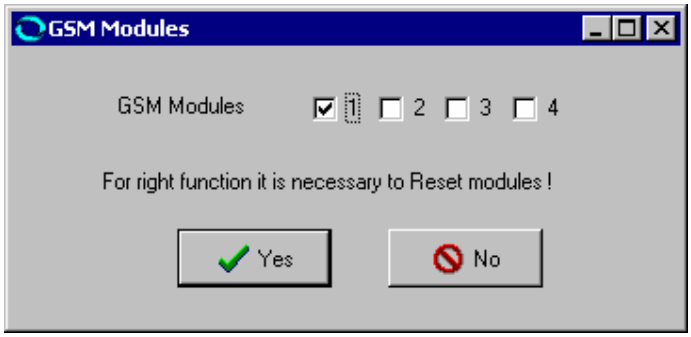
- **Name -** up to 14 characters
- **Don't account -** a line that shall not be billed
- **Roaming enabled** – enables roaming on the GSM line
- **Receive SMS** – enables SMS receiving
- **Send SMS** – enables SMS sending
- **CLIR selection** – selects CLIR –according to the GSM provider
  -restricts identification
  -presents identification
- **PIN** - a four-digit code for SIM card access
- **Prefix -** an up to 4-digit prefix to be dialled first automatically after the outgoing line seizure (dial-in through a superior system). It is not written in the accounting line.
- **Starting free minutes** - free minutes divided into three parts according to the type. They are added to the remaining free minutes if defined so.
- **Remaining free minutes** – free minutes to be currently used.

- **Reload of remaining free minutes** - select how to reload the remaining minutes: for settings see the Analog CO lines.

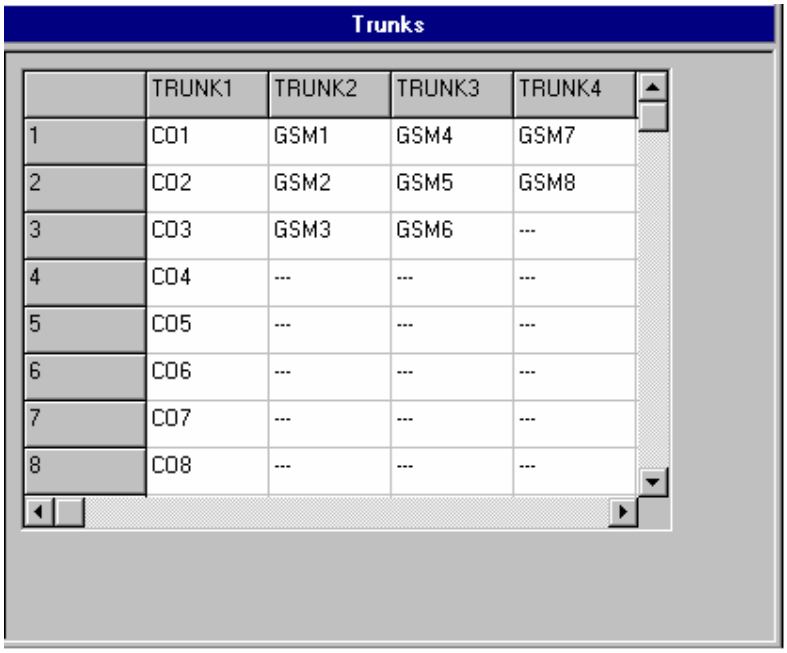
- **AT** – option to change the GSM module configuration. ***We do not recommend you to do this! A wrong intervention may result in module inoperation!***

- **SMS centre** – enter the SMS centre. The GSM module reads data from the available SIM card and so this item need not be selected.

Note: It is necessary to reset the GSM module whose parameters have been changed. If resetting is required, you are invited automatically to do so after the configuration has been loaded into the gateway:



9.3.3. Trunks



The chart is used for assigning CO lines into trunks. The maximum count of CO lines per trunk and the maximum count of trunks are 16. Every CO line may be in one or more trunks at the same time.

9.3.4. Global Data

Refer to *Global Data / CO Lines.*

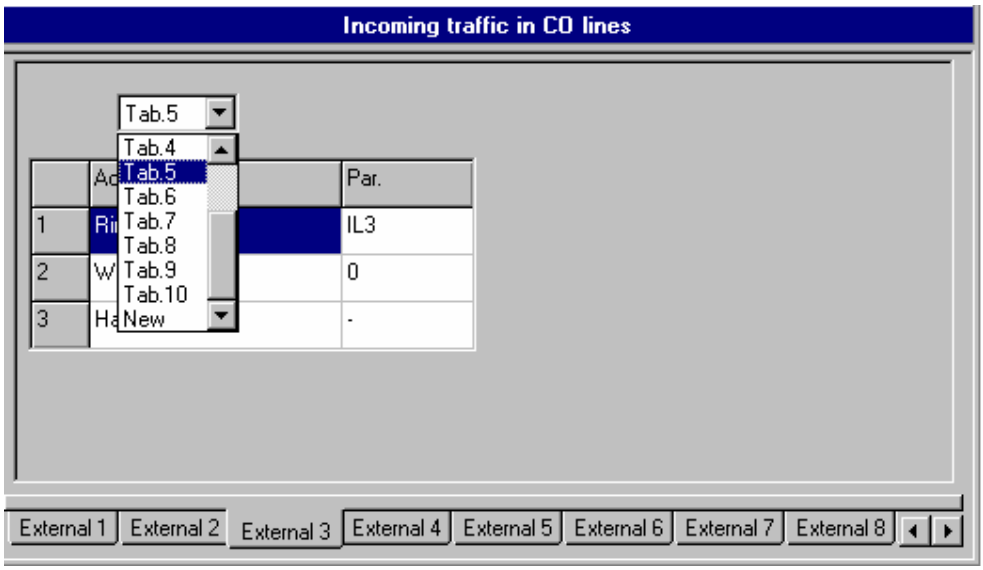
9.4. Incoming Calls

Define how the GSM gateway should process incoming calls.

9.4.1. Ringing

You can complete identical or different ringing charts for every CO line. The charts are general and can be used for any CO line.

Select a chart from the list or click on New to create a new chart.



9.5. MOBILITY Extension

Define the outgoing and incoming call rules here.

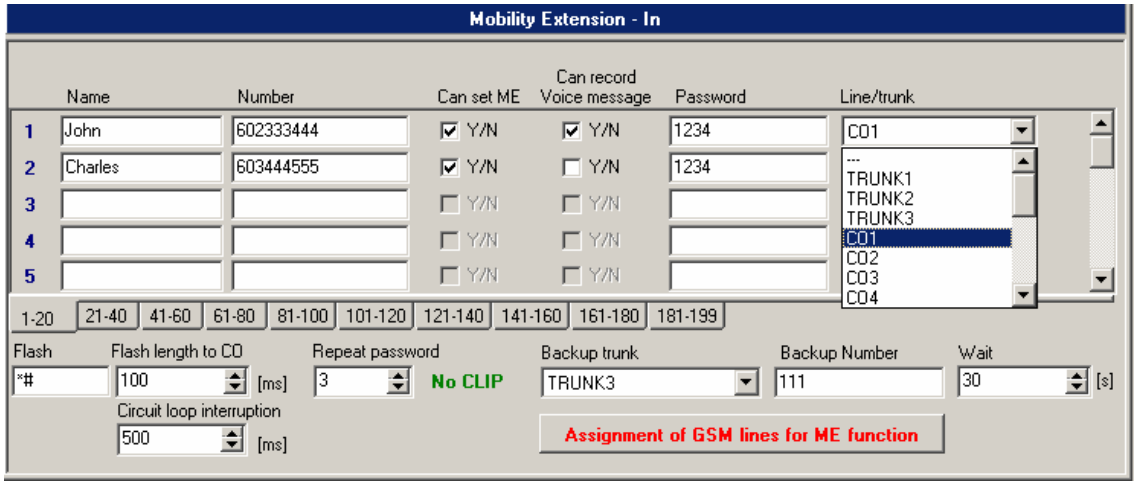
First define the users to use the Mobility Extension services (according to the CLIP) in the ***Mobility Extension – IN*** tag. Then, set rules for incoming GSM calls here and define which GSM lines (ports) shall be applied in incoming calls (by clicking on the 'Mode of GSM lines' key (Assignment of GSM lines for ME function)).

Now set the behaviour of CO lines (ports) in the Mobility Extension mode in the ***Mobility Extension – OUT*** tag.

9.5.1. MOBILITY Extension IN

Select which users may use the Mobility Extension and define rules for the incoming calls from the users. Assign the GSM line to be applied in incoming calls.

The maximum number of users is 199.



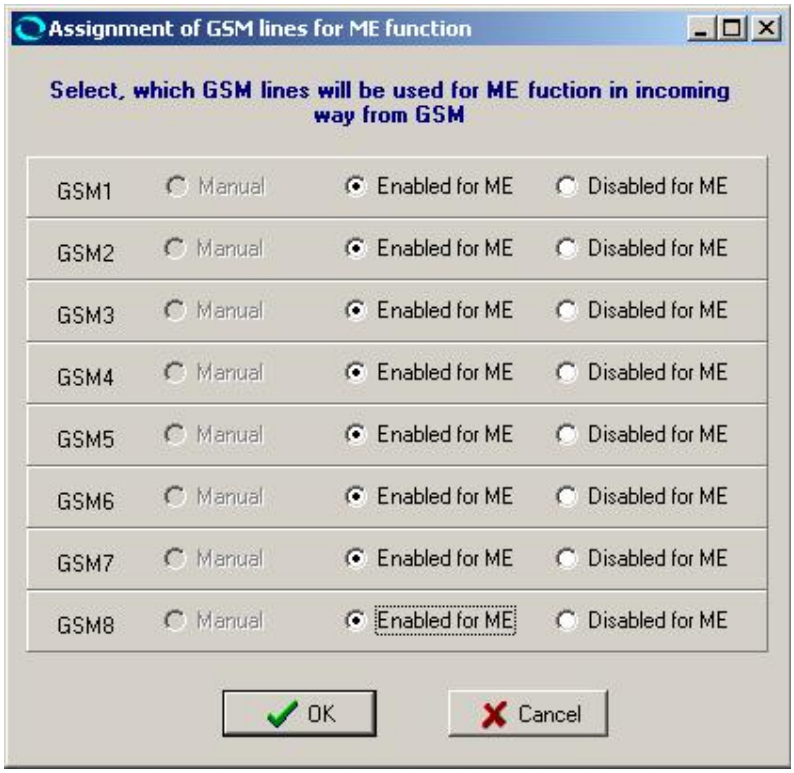
Complete the following table settings:

Name: -user name
Number: -user number (to be dialled for outgoing calls and checked in incoming calls to selected GSM lines)
Can set ME: -the user can set the ME in incoming calls.
Can record voice message: -the user may record voice messages in incoming calls.
Password: -password required for identification. Having entered the correct password, the user may go on dialling within the PBX. You are invited to enter the password with a special tone in your call.
Line/Trunk: -CO line or CO line trunk to which incoming calls shall be routed.

Flash: -Flash-generating characters for call transfer or other PBX services.
Flash length to CO: -length of the Flash generated
Repeat password: -count of available password attempts

Circuit loop interruption: -expected duration of the CO line loop current interruption after which the current call is considered terminated.

Having set the parameters above, click on ***Assignment of GSM lines for ME function*** to define which GSM lines shall be used for the ME function in incoming calls.

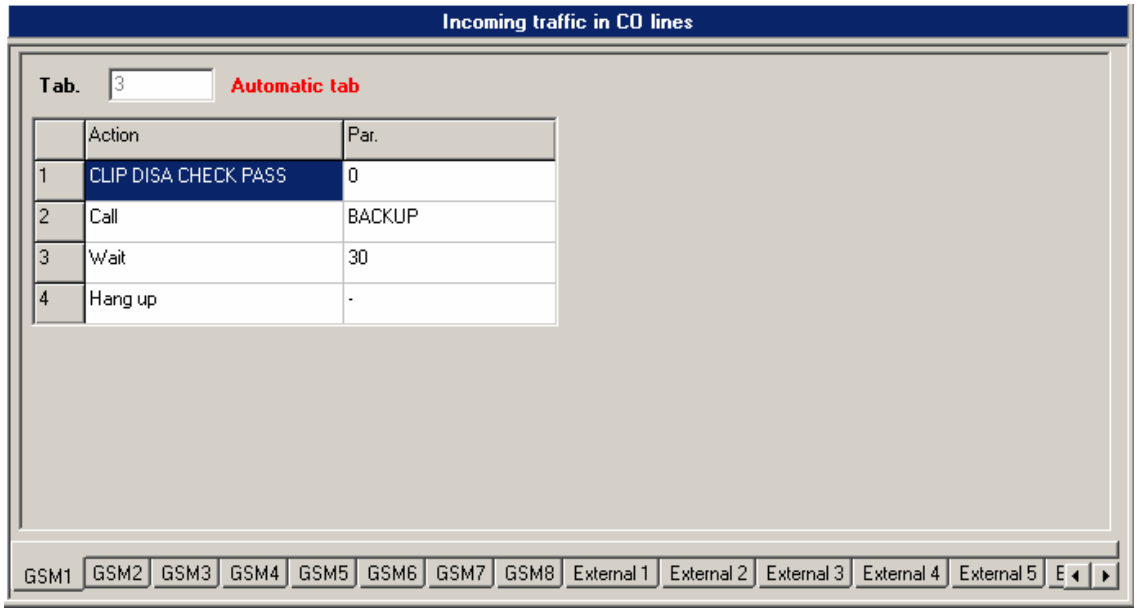


Select the ***No CLIP*** tag to allow the users that are not included in the list of users to dial in into the PBX.

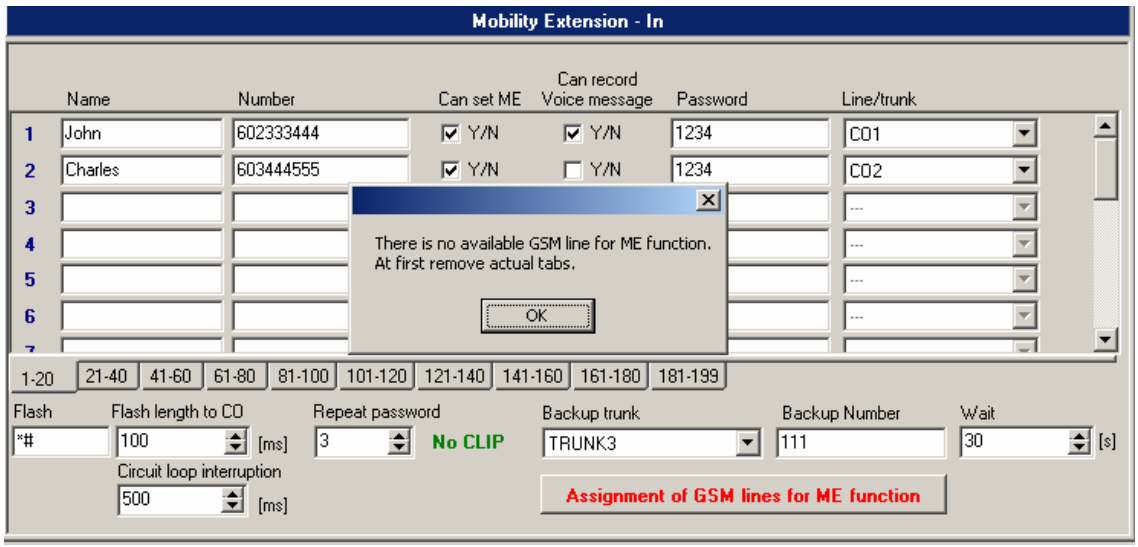
Backup trunk: -select a trunk of lines to be used for overflow calling.
Backup number: -enter the number to be dialled.
Wait: -define the ringing time for the selected number.

To set the duration of the overflow call, use the ***Global data/CO lines/Max. call time-interfaces with current detection*** tag. The default value is 900s=15min.

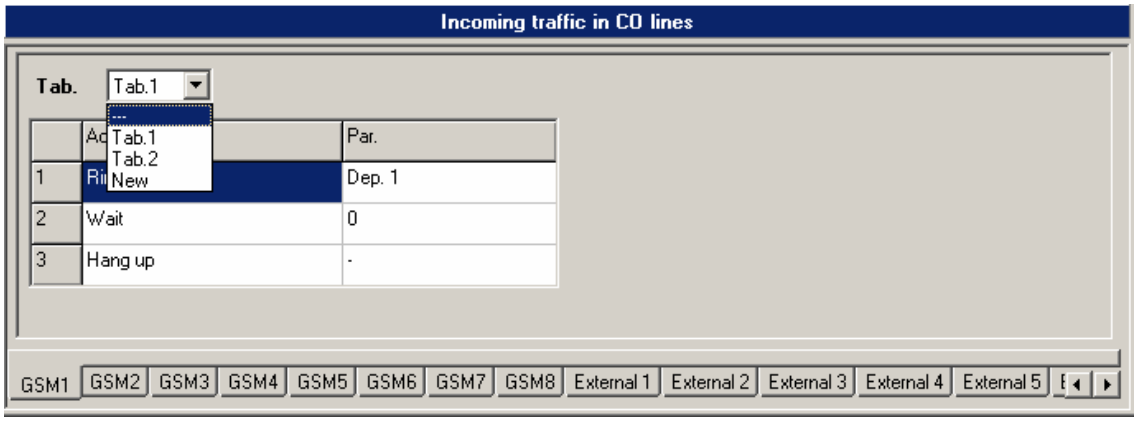
When you abandon the *Mobility Extension – IN* tag, an Automatic ringing table is created for incoming calls and assigned to selected GSM lines in the *Incoming way/Ringing* tag.



If all GSM lines have assignments other than the ME function, then you get the following warning upon entering into the ***Mobility Extension – IN*** tag:



Enter into the *Incoming way/Ringing* tag and cancel the ringing table assignments to the GSM lines.



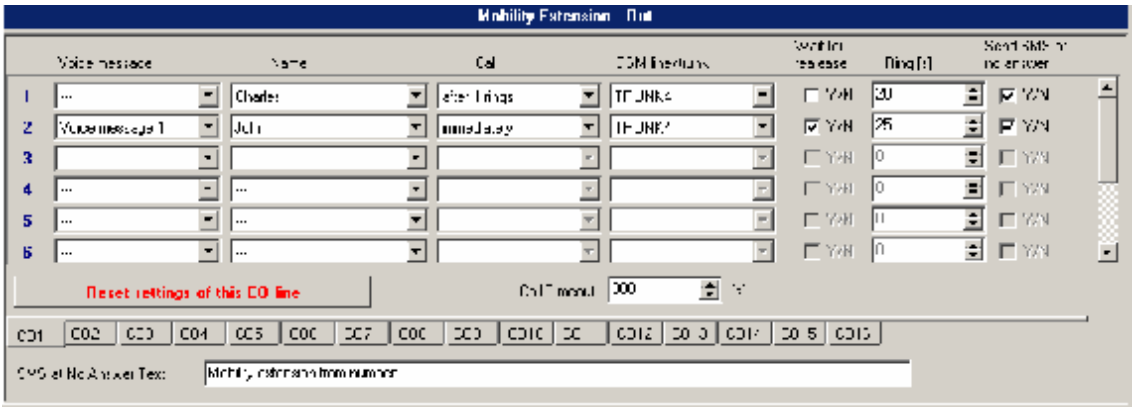
You cannot remove the ME assignments here. To cancel them, use the *Mobility Extension – IN* tag and select **Assignment of GSM lines for ME function.**

9.5.2. MOBILITY Extension OUT

This tag is used for setting rules for outgoing calls to CO lines. A CO line may be assigned up to 10 users (numbers) to which outgoing calls can be made. Moreover, you can put a voice message before each call (e.g. Wait for connection please).

Caution: When the voice message is being replayed, the connection has been established successfully and the call is billed to the incoming subscriber's account!

If the user is not available on the number selected and the CLIP has been detected, an SMS message can be sent to the user's number including the original CLIP if a CLIP-equipped CO module is used. The CLIP is detected using the FSK modulation.



Complete the following table settings:

Voice message*:* -define whether a voice message shall be replayed before the call. Select one of the following options: no assignment, voice message 1 – voice message 5. The total duration of all voice messages is 20s. The user can record the messages in an incoming call after confirming the user identification on condition that the user is enabled to record voice messages (in the *Mobility Extension – IN* tag). The voice messages are replayed from a *Voice module* mounted in positions J11 or J10.

Name*:* -name of the user to which the ME calls shall be made.

Call: -specify when the call to the selected user should start. Select one of the following options: never, immediately, after 1-8 rings (1 ring = 5s). The default parameter is 'immediately'. The user can set this parameter directly in an incoming call using the DTMF dialling. The 'after 1-8 rings' option is available to the user on the first line only. The other users may be assigned either 'immediately' or 'never'.

GSM line/trunk*:* -assign the GSM line or GSM line trunk to be used for outgoing calls. The GSM lines are assigned sequentially in the trunk as they get free (the

default trunk is trunk 4 with all GSM lines). Set the trunk in the *External lines/Trunks* tag.

***Wait for release**:* -enable/disable waiting for release of a busy GSM line or GSM line trunk before the call is made to the selected user. If waiting is disabled, the following free GSM line is chosen in the selected trunk.

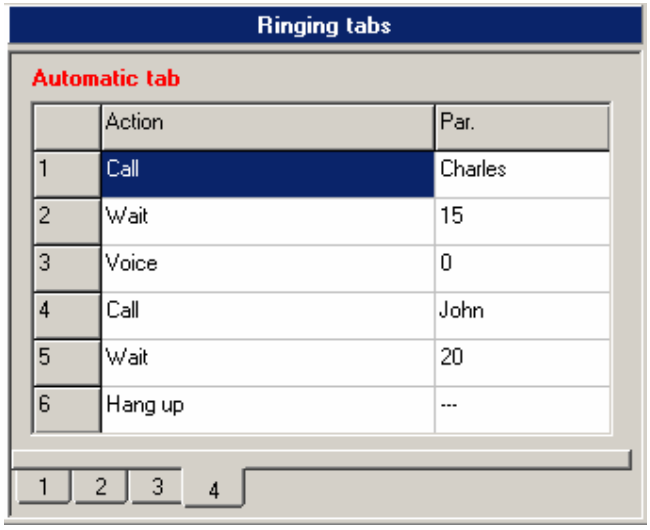
***Ring**:* -set the ringing time in seconds for the selected user. This parameter defines the total ringing time including waiting for GSM line release. This means that if Wait for release is enabled and the GSM line does not get free by this timeout, the following user is called (if included). By selecting '0' you set an unlimited ringing time. The unlimited ringing time may not be selected if the call transfer to the following user is mandatory and/or when the voice message replay has been selected.

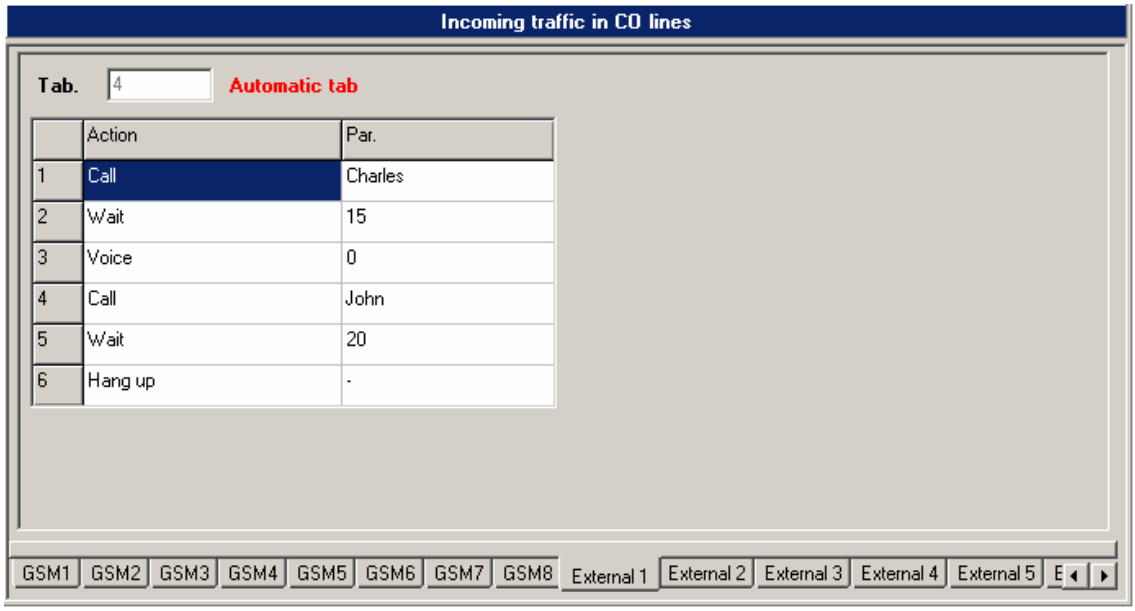
Send SMS at no answer: -set this parameter to allow for sending an SMS message to the user in case the outgoing call is not answered. The message includes the CLIP of the incoming call. In order to receive the CLIP, the Mobility Extension must be equipped with the CO modules that allow for CLIP reception. If the CLIP is not received, the SMS message is not sent.

Call timeout: -the call time in seconds. You are warned with a special tone 10s before the end of this limit. By entering a digit (0-9) during this warning signal, you can extend the call by 1-10 minutes (0=10min). The default value is 900s=15min.

SMS at no answer text: the text of the SMS message to be sent at no answer. The text (consisting of up to 48 characters) is followed by the CLIP automatically. The default text is: Mobility Extension from number:

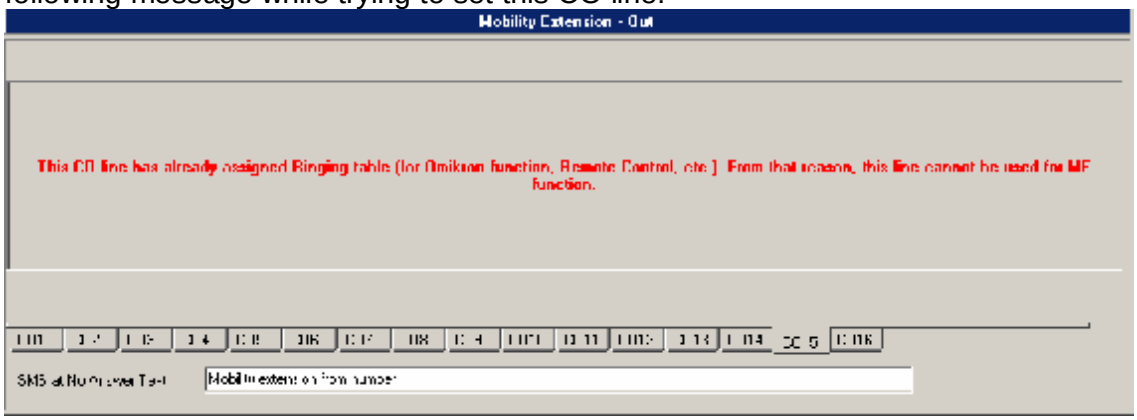
The settings are reflected accordingly in the ringing tables in the *Incoming way/Ringing-Ringing tables* tag.



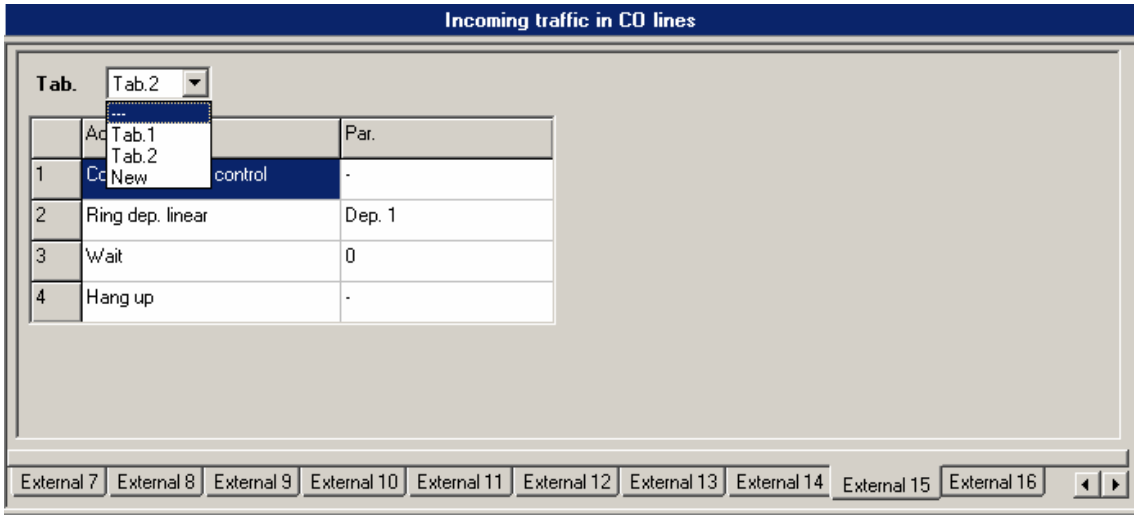


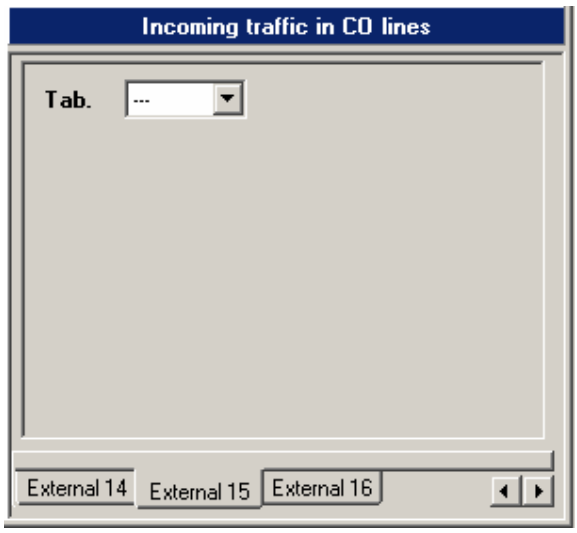
To cancel the previously made settings press ***Reset settings of CO lines***.

If a CO line is assigned a setting other than the ME function, then you get the following message while trying to set this CO line:



Enter into the *Incoming way/Ringing* tag and cancel the ringing table assignments to the selected CO line.





You cannot cancel the ME assignments here. To cancel them, use the *Mobility Extension – OUT* tag and select ***Reset settings of CO lines.***

9.5.3. DTMF Setting of MOBILITY Extension by User

Defined users may set the ME function and record voice messages during incoming calls.

To set the ME during an incoming call (*Mobility Extension – IN* tag) follow the instructions below:

-dialtone Morse I (..) = enter password

-dialtone Morse A (.-) = set ME, record voice message
-options:
-#0 –never call ME
-#1 –call ME immediately
-#2 - #9 –call ME after 1 – 8 rings

-#*1 - #*7 –record voice message 1 – 7
##1 - ##7 –replay voice message 1 – 7

-### -do not program
-confirmation tone Morse D (-..) = ME setting accepted

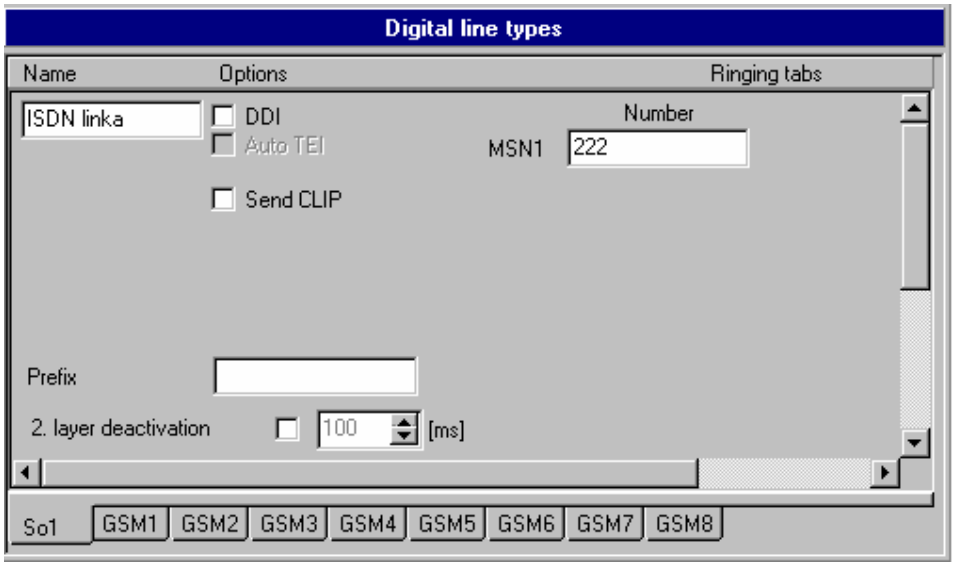
The maximum total length of all voice messages is 20s.

9.6. ISDN Line

Set the ISDN line parameters in the *External lines/Types of digital lines/S_0X* bookmark.

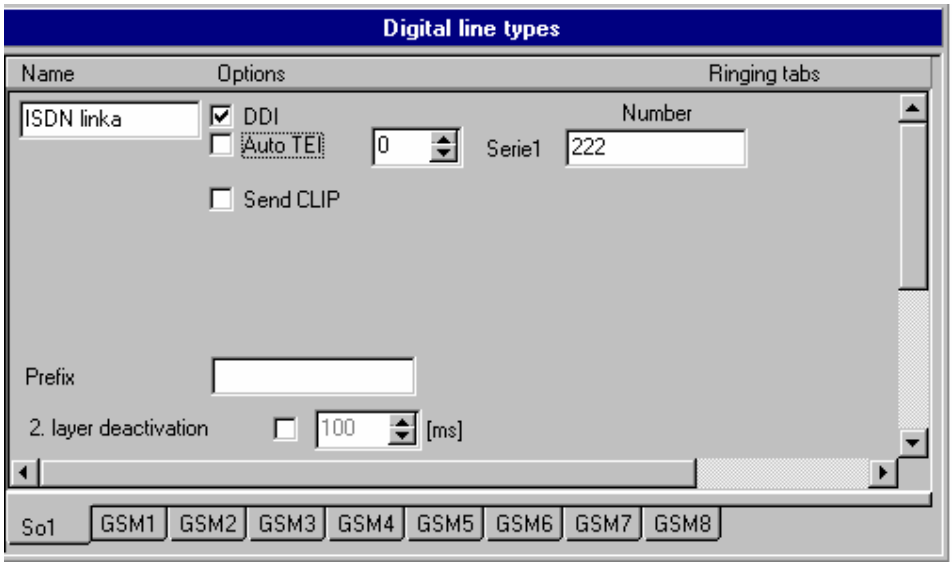
The ISDN-BRI line in ME can be used as a terminal only. Therefore, set the respective ISDN line in the PBX as an NT terminal.

The **PTMP** (Point-to-MultiPoint) ISDN line setting is as follows:



- **Name:** -line name (for information only)
- ***DDI:*** -disabled in the PTMP mode
- ***Auto TEI:*** -terminal endpoint identifier (disabled in the PTMP mode)
- ***Send CLIP:*** -activate transfer of the CLIP from the external network
- ***Prefix -*** -an up to 4-digit prefix that is dialled first automatically after seizure of a line (dialling prefix). Not recorded in the accounting line.
- ***MSN1:*** -enter the MSN

The **PTP** (Point-to-Point) ISDN line setting is as follows:



- **Name:** -line name (for information only)
- ***DDI:*** -must be enabled
- ***Auto TEI:*** -set the terminal endpoint identifier according to the PBX configuration
- ***Send CLIP:*** - activate transfer of the CLIP from the external network.
- ***Prefix*** an up to 4-digit prefix that is dialled first automatically after seizure of a line (dialling prefix). Not recorded in the accounting line.
- ***Series1:*** -enter the number of series according to the PBX configuration

Caution: The ISDN PTMP mode is selected by default. If you change the parameters to get the PTP mode, RESET the MOBILITY Extension.

9.7. REMOTE SUPERVISION

9.7.1. This is what remote supervision makes possible:

- an instantaneous response to client needs;
- 2N - MOBILITY Extension programming where such parameters are maintained as for a serial link;
- firmware change;
- time RESET setting;
- GW port status monitoring;
- speech bus traffic monitoring;
- downloading of call accounting DATA;
- downloading of log-system DATA.

9.7.2. What you need

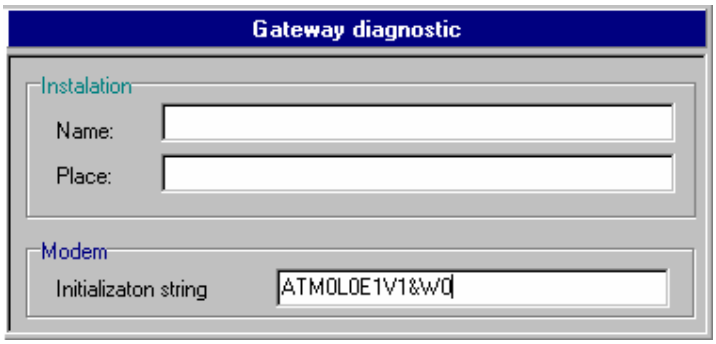
To establish remote connection via a modem you need:

- a 2N - MOBILITY Extension;
- an OMOD modem module in position J8 on the motherboard;
- a PC with installed Universal config tool for OMIKRON and MOBILITY Extension Version ;
- a modem (not a winmodem) connected to your PC;
- a file (YYMM-3XXXX.PBX (YearYearMonthMonth-3SerialNumber)) for access to the 2N - MOBILITY Extension unit to be supervised.

9.7.3. Modem Module (OMOD) Setting

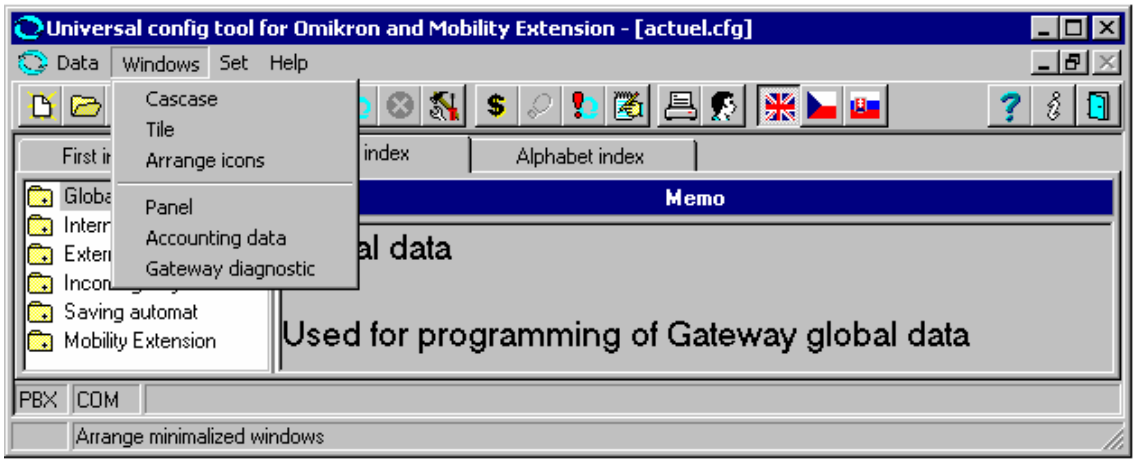
To configure the internal modem module (OMOD) use the Universal config tool for OMIKRON and MOBILITY Extension. Use the AT command (unless necessary, we do not recommend to change the default setting) and RESET the GW after every change. The modem change shall be apparent 10 s after the RESET.

Silent operation is set for the modem by default (M0L0E1V1&W0).



9.7.4. Description of Menu a Bar Buttons

MENU – WINDOWS



Panel - when the connection with the ME to be supervised has been established, statuses of all lines and traffic on speech buses get displayed.

Accounting data - when all accounting and diagnostic lines have been loaded from a file (YYMM-3XXXX.ACC), the window displays the available accounting data (calls).

PBX diagnostics - when all accounting and diagnostic lines have been loaded from a file (YYMM-3XXXX.DIA), the window displays the available diagnostic data (log-system lines).

Connect with Gateway - displays a window showing a directory tree for you to select a file for establishing connection with the GW to be supervised.

Interrupt modem connection - interrupts modem connection with the GW to be supervised, maintaining necessary connections to the GW in the Universal config tool for OMIKRON and MOBILITY Extension.

Recover modem connection - re-establishes connection with the GW when the modem connection-interrupting button has been pressed.

Cancel modem connection with Gateway - cancels modem connection with the GW to be supervised and all connections with the GW in the Universal config tool for OMIKRON and MOBILITY Extension.

Communication setting - displays a window for communication and modem settings.

Load accounting and diagnostic lines - downloads DATA for call billing and log-system lines.

Download data from Gateway - downloads the configuration from the GW to be supervised.

Save data to Gateway - saves the configuration to the GW to be supervised.

Upload license to Gateway – uploads the given licence to the gateway.

9.7.5. Establishing Connection

Gateway Setup to Be Supervised

This can be used in case that:
-there is a CO line reserved for remote control;

Example of ringing chart settings

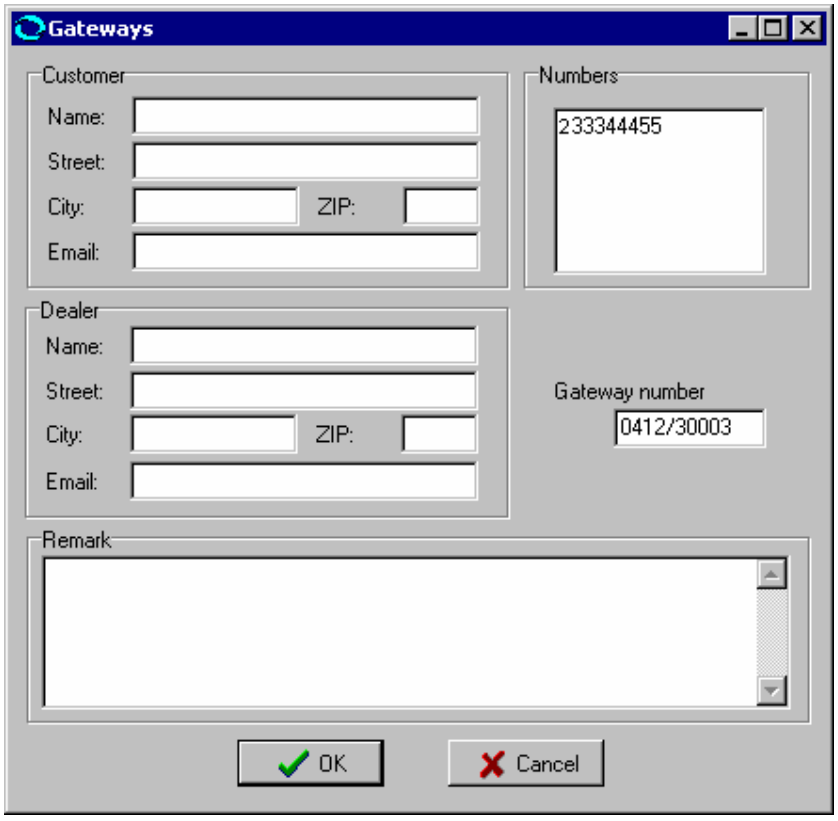
Connect remote control	…
Wait	0
Hang up	…

Note: If no modem modules have been detected in the GW, the first ringing chart line is ignored.

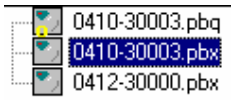
Creating and writing of a gateway remote access code

To enable remote control of ME, it is necessary to create an access code and write it into the gateway.

1. Press the "Connect with gateway" button on the tray.
2. Press button "Create".



3. you must fill in the *gateway number*.
4. you must fill in a phone number, which will be used for the remote modem connection.
5. you may enter information about the customer and dealer.
6. click /OK/ for confirmation.
7. choose the correct code from the offered codes and write it into the gateway by pressing "Write Code“. While writing the code, it is necessary to be connected to the gateway over the serial interface.



8. While writing a new code, you will be notified if a code already exists. By pressing the Ignore button you get the code overwritten.

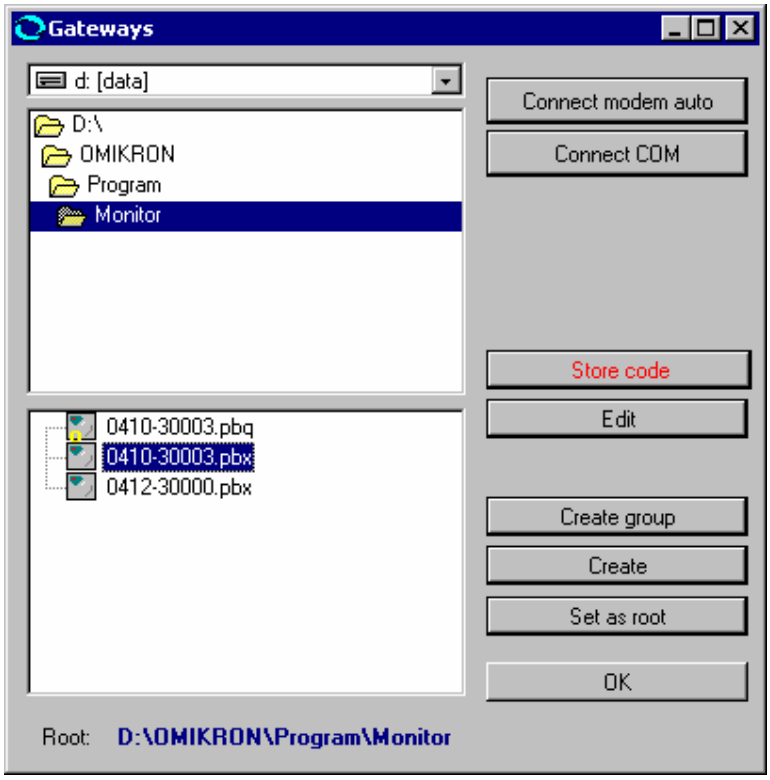
Note: Always create the access codes that match the existing valid serial number of the gateway.

How to Proceed

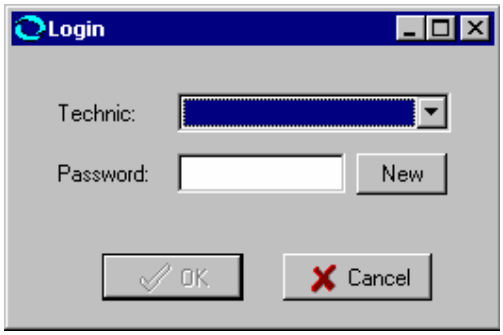
9. Run the Universal config tool for OMIKRON and MOBILITY Extension.
10. Press the button on the COMMUNICATION SETTING bar (symbol of tools) and check and set modem parameters as follows:

- select the COM port connected to the modem;
- set the communication rate (according to the modem type);
- select the use of PREFIX (superior PBX, modem connection tone transmission setting - the 'roof' (^) symbol (according to the modem type);
- select the CO dialling type;
- confirm the settings by pressing OK.

11. Press the button on the CONNECT WITH GATEWAY bar;
12. Select (with the mouse) the GW (YYMM-3XXXX.PBX file) to be supervised.



13. Press the CONNECT MODEM AUTO button.



14. Enter the technician responsible for your remote supervision, confirm the login password (or create a new technician by pressing the NEW button) and press OK to quit the dialogue window.

15. Select the telephone number for your remote supervision and press the DIAL button (if there is just one telephone number, this dialogue window is not displayed).
16. Now the connection is being established.
17. If everything is OK, the following information windows get displayed:
    - establishing connection;
    - connection established;
    - remote supervision password verified.
18. The following data are available on the bottom bar (from left to right):
    - connection type (MOD);
    - time running on the GW under supervision (activity is indicated by a pulsating target);
    - serial number of the GW under supervision (YYMM/3XXXX connected).
19. Now proceed as if you were connected via a serial link.

9.7.6. Loading Data

When the GW connection has been established successfully, you can download DATA (accounting + system messages). To do this, press the button on the DOWNLOAD ACCOUTING AND DIAGNOSTIC DATA bar of the *Universal config tool for OMIKRON and MOBILITY Extension*.

Both types of DATA are loaded together and the downloading procedure is displayed graphically.

To display individual DATA press the WINDOW – ACCOUNTING DATA or GW DIAGNOSTICS menu.

Once downloaded, the data are displayed from files (YYMM-3XXXX.ACC, or YYMM-3XXXX.DIA). These files are created upon the first download from the GW in the directory with the remote supervision file (RRMM-3XXXX.PBX) and extended by further downloads.

9.7.7. Panel

When the GW connection has been established, you can press the WINDOW – PANEL menu to display the port status panel of the GW under supervision including speech bus traffic data. When the connection is active, bus 11 and call status are always displayed for the line used for remote control.

9.7.8. Remote Supervision Logistics

A record is made on accomplished remote control operations in the YYMM-3XXXX.LOG file, including date, name of responsible technician, way of connection establishing, and whether or not the data download or configuration record was made.

This file is saved together with the YYMM-3XXXX.PBX file.

9.7.9. Interrupting Connection

To interrupt modem connection (in order to cut connection costs) press the button on the INTERRUPT MODEM CONNECTION bar.

This action interrupts your connection but remembers the telephone number used. This means that all you need to re-log in is to press the button on the RECOVER MODEM CONNECTION bar, which results in automatic dialling and connection establishing.

9.7.10. Cancelling Connection

To cancel connection once established press the button on the CANCEL MODEM CONNECTION WITH GATEWAY bar. This cancels modem connection and any relation to the respective GW in the programming tool.

9.8. Accounting and Diagnostic DATA Downloading

It is recommended to download accounting (billing) and diagnostic DATA in order to keep control of calls and the system. Downloading can be made using:
- the Universal config tool for OMIKRON and MOBILITY Extension, or
- the XAPI Server.

The billing line starts with a **'$'** and contains the following items, separated with the **'-'** character:

```
$051099-163032-AUT -G1-P01 -    -00011-00000-603444555-
```

- Call end date in the **ddmmrr** format, i.e. 6 characters;
- Call **end** time in the **hhmmss** format, i.e. 6 characters;
- Call type – 4 characters with the following meanings:
- **IN** **...** incoming answered call
- **INN** **...** incoming unanswered call

- **AUT** **...** automatic outgoing call

- External line sequence - 2 chars
  - **01-08 - 8 analog CO lines**
  - **G1-G8 - 8 GSM lines**

- Subscriber line sequence - 4 chars
  - **P01 -P08 - 8 analog subscriber lines**

- Call duration in seconds, 5 chars (maximum 65535s)
- Count of received tariff pulses, 5 chars (maximum 65535).
  - § Replaced by the ringing time for incoming calls.
- Dialled number or calling line identification, 16 chars.

The **Service line** starts with an **'*'** (asterisk) followed by a system text message.

```
*220205-140338-ATEUS-OMIKRON 7.01r04-Start of the Gateway 39. at sequence, S/N: 0502/30028
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:1 detected module SIEMENS TC35 V 03.06/4.08/350450412026703
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:3 detected module SIEMENS TC35 V 03.06/4.08/350450412027107
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:5 detected module SIEMENS TC35 V 03.06/4.08/350450412026588
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:8 detected module SIEMENS TC35 V 03.06/4.08/350450412026711
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:2 detected module SIEMENS TC35 V 03.06/4.08/350450412026729
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:4 detected module SIEMENS TC35 V 03.06/4.08/350450412027115
*220205-140358-ATEUS-OMIKRON 7.01r04-GSM gateway No.:6 detected module SIEMENS TC35 V 03.06/4.08/350450412026570
```

The IMEI identification is displayed behind the GSM module firmware version during the GSM module identification process.

9.8.1. Using Universal config tool for OMIKRON and MOBILITY Extension

Press the button. All accounting and diagnostic data are read out from the gateway and saved into two files in the Universal config tool for OMIKRON and MOBILITY Extension main directory. The **Data.acc** file contains accounting data and the **Data.dia** file includes diagnostic data.

This method is used for DATA that are saved in the background of the main accounting data warehouse and so the DATa LED on the 19“version display does not go off.

9.8.2. Using XAPI Server

When communication with the XAPI server has been established, the main accounting data warehouse of the capacity of approximately 3,000 lines is read out automatically. The data are saved into the **OmikEG1-4.new** file, which is created automatically in the DBF. subdirectory in the XAPI server item. Here accounting DATA are stored together with diagnostic data.

9.9. Upgrade of firmware to the 2N - MOBILITY Extension

Here is described proper procedure for upgrade of the firmware:

1. Read and save the initial settings of the central unit by the Universal config tool for OMIKRON and MOBILITY Extension.
2. Read all accounting data (if they are further processed).
3. Terminate all open connections.
4. Start new Universal config tool for OMIKRON and MOBILITY Extension and import the firmware in menu **Data – Upload Gateway software** and reset a boot from flash (you will be automatically prompted by Universal config tool for OMIKRON and MOBILITY Extension).
5. Press (3 – 4 sec) both reset buttons (SW1, SW2) on the central motherboard and reset to the manufacturing values. **No longer!** (The central would have pass to the service mode - then it is necessary to repeat the procedure).
6. Copy the initial data (name.cfg) to the folder of the new Universal config tool for OMIKRON and MOBILITY Extension and read them by the Open command.
7. Check the setting of <u>all</u> parameters of the central.
8. Back-up the configuration to the hard disc.
9. Export data to the central unit.

9.10. License

Purpose of the license : -SW function limitation (function validity term)
-identification of the Omikron / Mobility Extension type

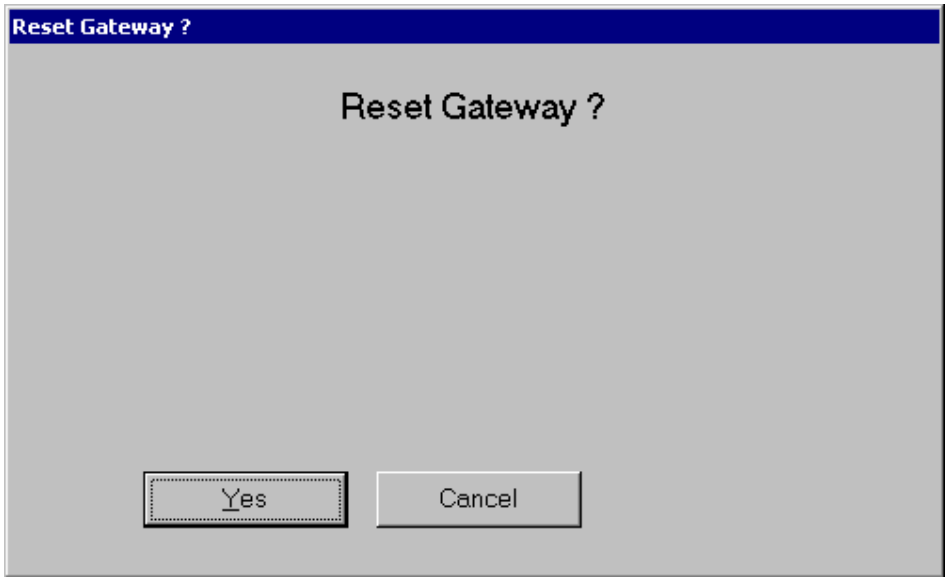
9.10.1. License Storing

The license is a file in the "name.lic“ format.

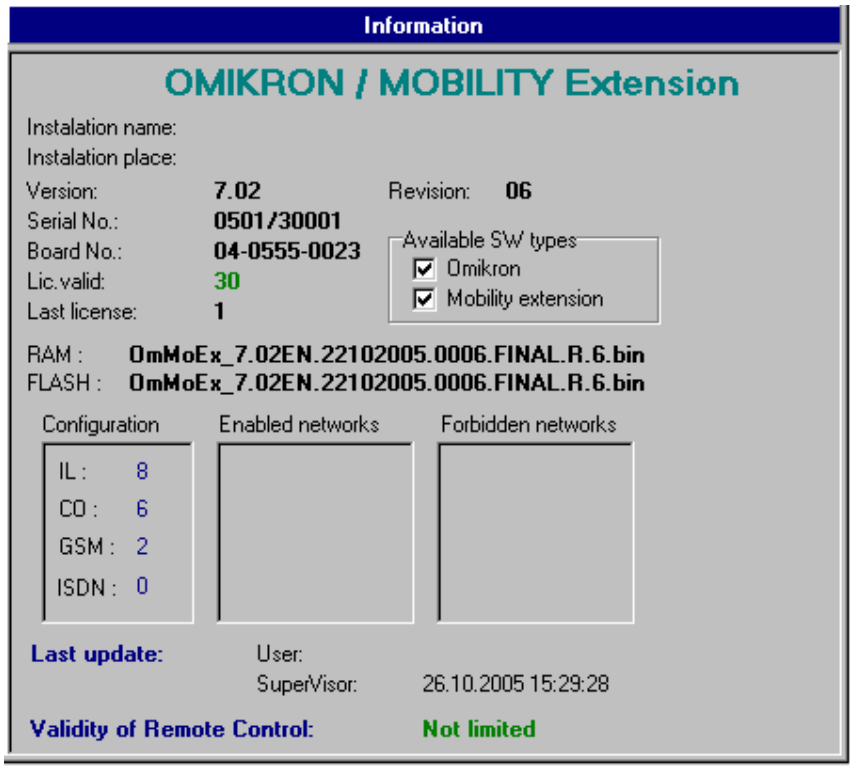
To store the license:

1) press the button on the bar;
2) select the licence file from the directory;
3) confirm your selection;
4) you are informed of the licence validity term upon storing;

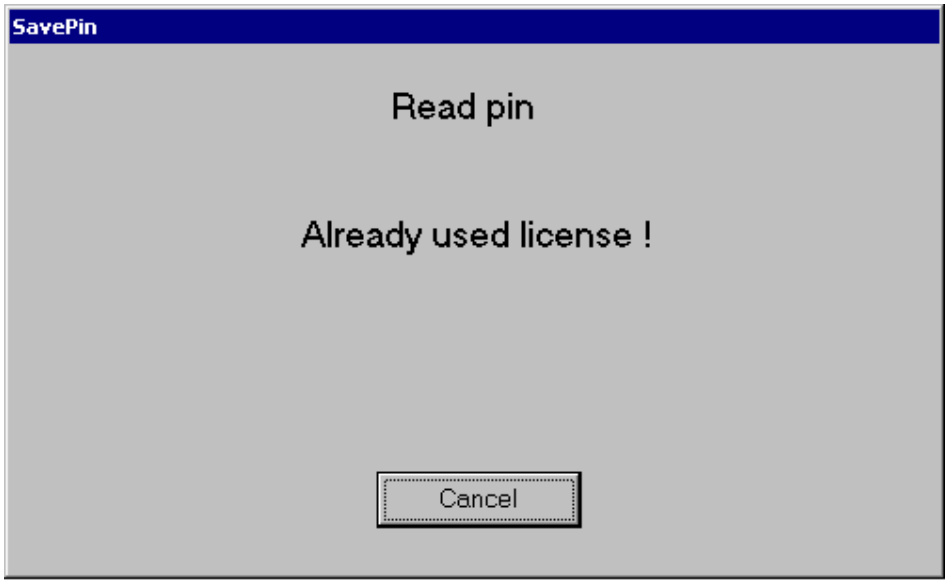
5) RESET the gateway;



6) read back DATA for verification, find information on the licence in the Global data/Information menu;



Warning: *Any repeated attempt to store an identical license or a different CPU board related license is rejected with the following warning:*



SavePin
Read pin
License for different Board No. !
Cancel

10. LCR Settings

For instructions for setting the LCR – Least Cost Router and other features of the 2N – OMIKRON GSM gateway refer to the 2N – OMIKRON User Manual available on the CD enclosed.

Notes:

The manufacturer reserves the right to modify the product in order to improve its properties.

Use the product in accordance with the Instructions for Use and for the purpose it has been designed and manufactured for.
When the service life of this product has been exhausted, dispose of the product in conformity with applicable environmental regulations.